The ILLINOIS Medical Journal

Official Journal of the Illinois State Medical Society

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Vol. 101, No. 6 June, 1952

3800 WERE THERE

The 1952 Annual Meeting of the Illinois State Medical Society was held at the Hotel Sherman, Chicago, May 13, 14, 15, and the programs were conducted in accordance with the official program published in the April Illinois Medical Journal. The attendance was excellent, and many favorable comments on the arrangements, conduct of the meeting in general and the fine cooperation on the part of the hotel personnel, were received.

With the annual meeting of the American Medical Association scheduled for Chicago three weeks later, the attendance was highly satisfactory to everyone responsible for the arrangements for this annual meeting of the State Society. The total overall registration, was 3802, with the following breakdown;

Physicians	2109
Medical Students	354
Guests	578
Interns	36
Exhibitors	418
Auxiliary & lady guests	307

The fine display of both commercial and scientific exhibits was well arranged and well attended throughout the meeting. Dr. Coye Mason as Director of Scientific Exhibits, also arranged the previously popular array of motion pictures which more greatly appreciated by the many who saw them throughout the session.

The July issue of the Illinois Medical Journal will carry a report of the meeting with highlights, new officers, Councilors, and other information of interest relative to the meeting.

The meetings of the House of Delegates were carried out on schedule and two busy sessions were held. The complete transactions will be published in the July and August issues of the Journal.

The 1952 Annual Meeting will go down in history as an exceptionally successful meeting. The succeeding annual meetings will be held in Chicago in 1953, 54, and 55, in accordance with the approval of the House of Delegates, and subject to approval of the Council.

THE WORLD MEDICAL ASSOCIATION

Many of our readers are no doubt confused with the many organizations which have come into existence since the end of World War II. The World Medical Association (W.M.A.) is made up of practicing physicians and their national associations of the free world. Today, there are 43 nation members of this Association, it is a non-governmental organization which receives its funds from membership dues and voluntary contributions.

During the recent world war, physicians from many nations met frequently in London and elsewhere in the European centers, discussed mutual medical problems and thought it would be to a mutual advantage if a world wide medical organization could be developed. Conferences were held in London and a committee was formed to draft a Constitution and Bylaws for a World Medical Association. These were submitted to the First General Assembly at Paris, and the official organization was effected in Paris on September 18, 1947.

The aims and objectives of the World Medical Association were outlined in the Constitution;

1. To promote closer ties among the national medical organizations and among the doctors of the world by personal contact and all other means available.
2. To maintain the honor and protect the interests of the medical profession.
3. To study and report on the professional problems which confront the medical profession in the different countries.
4. To organize an exchange of information on matters of interest to the medical profession.
5. To establish relations with, and to present the views of the medical profession to the World Health Organization, UNESCO and other appropriate bodies.
6. To assist all peoples of the world to attain the highest possible level of health.
7. To promote world peace.

To date, five General Assemblies have been held in Paris, Geneva, London, New York and Stockholm. The next General Assembly will be held in Athens, October 12-16, 1952.

In 1948 and Association adopted a modification of the Hippocratic Oath, known as the Declaration of Geneva. This was the result of a study of German War Crimes. The Declaration simpler than the Hippocratic Oath, covers points not mentioned in the latter. Likewise an International Code of Medical Ethics was adopted by the Third General Assembly held at London, October 1949. This code divided in three parts, (1)—duties of doctors in general;—(2)—duties of doctors to the sick, and (3)—duties of doctors to each other.

All members of county and state medical societies, are invited to join the World Medical Association, through its United States Committee, Inc., which membership brings the following:

1. Certificate of Membership, an introduction card to 500,000 doctors of 43 nations joined in a world wide movement for the highest possible level of health.
2. The World Medical Association Bulletin, issued quarterly, and all published studies, with data nowhere else available on scientific, economic, educational and social world trends.
3. Letters of introduction to foreign medical associations and their members, facilitating professional contacts when doctors travel abroad.
4. A share in defending the interests of the medical profession in collaboration with other international groups, such as UNESCO and WHO.
5. The satisfaction of sharing the advantages of our medical progress with other lands, thus repaying a debt for the inspiration we have drawn from many countries through the generations.

Any members of a county and state medical society may join the World Medical Association's United States Committee for $10.00 annual dues. The Secretariat of the Association is located in the Academy of Medicine Building, 2 East 103rd Street, New York 29, N.Y.

The Secretary-General of the World Medicine Association is Louis H. Bauer, M.D., currently the President-Elect of the American Medical Association.

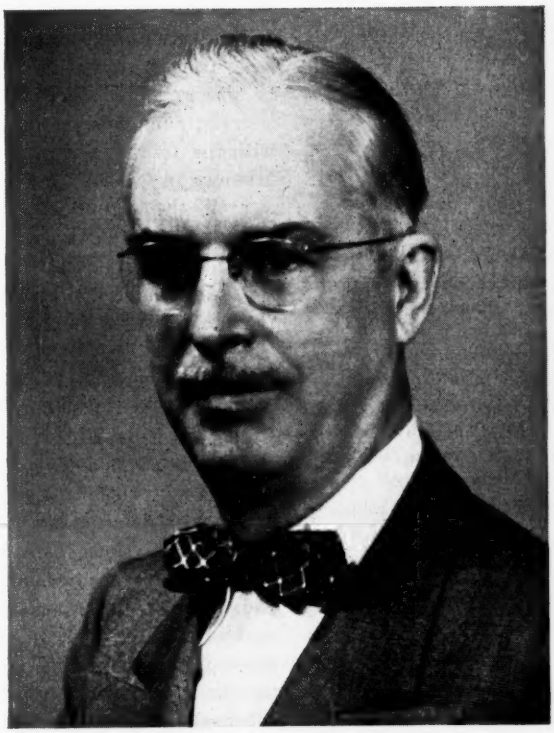
It is hoped that hundreds of Illinois physicians will join this World Medical Asociation, and do their part in making it truly a world-wide outstanding medical organization.

SCIENTIFIC EXHIBIT AWARDS

At the recent Annual Meeting of the Illinois State Medical Society, there were more than the usual number of fine scientific exhibits. These were well arranged and covered many phases of modern medical care. The Committee on Awards had much difficulty in selecting the winning exhibits, for the awards. These are presented under two categories;

1. For Educational Value.
2. For Original Work.

The prize winning exhibits in the two classes were;



Leo P. A. Sweeney, M.D.

President, Illinois State Medical Society

1952-1953

FOR EDUCATIONAL VALUE

Gold Medal — "Fractures of the Forearm with Special Reference to Colles", The Galesburg Clinic

Silver Medal — "Evaluating the Physical Disabilities of the Cerebral Palsied"
F. A. Hellebrandt, Joseph L. Koczur, Sara Jane Houtz, Chicago
University of Illinois College of Medicine and Stritch School of Medicine of Loyola University

Bronze Medals — "Abnormal Bleeding in Gynecology" — Practical Approach to Diagnosis and Management
Walter J. Reich, Mitchell J. Nechtow, Angela Bartenbach, Chicago
Cook County Hospital, Cook County Graduate School and Chicago Medical School

2- "Inflammatory and Neoplastic Lesions of the Colon"
James M. Christie, Charles W. Christie, Irving Weisman, Champaign
The Christie Clinic, Champaign

3- "Replacement Transfusion in Erthroblastosis Fetalis" A. R. Eveloff, C. N. Christensen, Springfield, The Springfield Clinic

FOR ORIGINAL WORK

Gold Medal — "Chemical and Radio Isotopic Measures of Hemopoiesis" Walter A. Rambach, Howard L. Alt, John A. C. Cooper, Chicago
Departments of Medicine and Biochemistry, Northwestern University Medical School

Silver Medal — "Failures in Fenestration Surgery"
George E. Shambaugh, Jr., Eugene L. Derlacki, Donald W. Shuster, Jesse E. Wallter, Chicago
Northwestern University Medical School

Bronze Medal — Nephrotic Syndrone and the Pituitary-Adrenal Complex
Edith B. Farnsworth, Chicago
Northwestern University Medical School

"The Human Testis: The Effect of Testosterone"
Norris J. Heckel, James H. McDonald, John E. Baylor, Chicago

"Comparison of X-Ray and Electron Beams from the 23 Million Volt Betatron"
Lewis L. Haas, John S. Laughlin, Roger A. Harvey, Chicago
University of Illinois College of Medicine

The main responsibility and opportunity of diagnosing pulmonary tuberculosis in the elderly lies with the general practitioner; for most of them seek his advice an account of symptoms, and an awareness of the prevalence of the disease in these age groups should lead the practitioner to have chest radiography and sputum examination performed in all cases before diagnosing chronic bronchitis and emphysema. M. B. Paul, M.D., The Lancet (London), August, 11, 1951.

THE TRIUMPH AND TRAGEDY OF FATHER MARQUETTE IN THE ILLINI COUNTRY

David J. Davis, M.D.

Permanent State Medical Historian
(A Historic Medical Episode in Illinois)

The story of Marquette in Illinois is one of the State's earliest and greatest historic epics. Historians have told it many times in superb and dramatic fashion, Parkman for example.

Father Marquette was the first white man in The Illini Country to suffer and to die of an infectious disease. The nature of that disease should be of interest therefore to physicians.

Marquette was born in 1637 in France. He came from a prominent French family in which he was well bred and well educated. Being of a strongly religious temperament, he early united with the Jesuits, and in 1666 he was sent to the Missions in Canada.

From the beginning, he revealed energy and enthusiasm in his work. In a short time, he had acquired the use of six Indian languages. Two years later, he was directed from Eastern Canada to go to the far away missions on the Great Lakes.

It was where at Point St. Esprit near the western end of Lake Superior that he first met some wandering Illini Indians. They appealed to him to come down to teach and to preach among their people in a country far to the south. This appeal Marquette never forgot.

About that time, many shadowy reports were reaching the French colonies through the several Indian tribes, living and trading in the far distant western regions. In 1673, therefore France decided to explore those regions and especially the then unknown upper Mississippi River. Where upon the Governor of New France, Frontenac, directed Joliet together with Father Marquette as his missionary associate to undertake this stupendence project. Marquette was overjoyed at the prospect of Christianizing the savages of this vast interior of America.

Starting from St. Ignace in their canoes and largely on their own as to supplies, Marquette and Joliet, together with five Frenchmen coasted down the north shore of Lake Michigan; thence into Green Bay and up the Fox River; and by portage over to the Wisconsin River. Thence down to the Great River, The Mississippi, and south on this river, past the Missouri, the Ohio and other to the mouth of the Arkansas. Here

their progress was stopped.

For it was at this time and place, that a series of critical events occurred in this grand adventure, one of which especially boded ill for the future. This was the illness of Marquette.

First, the Indians here were not only numerous, but were sullen and threatening. Second, the Frenchmen learned from these Indians that down the river were both savages and Spaniards who were warlike and who would surely destroy them if they proceeded further. By this time, the evidence was clear that the great River flowed into the Gulf of Mexico which long before had been explored and claimed by the Spaniards. Furthermore France and Spain were again at war.

Third, the Indians round about had in their possession various implements made of iron — guns, knives, spears — which could have come only from the Spaniards.

Fortunately Marquette met one Illini Indian here with whom he could converse and thus explain many things to these threatening savages.

But of far greater moment than all the above incidents was the appearance in Marquette of the early symptoms of an illness, called in the current and extant reports dysentery. The term "flux" later was used at times. Naturally but unfortunately not many medical details were recorded. Neither do the records tell whether or not the Indians were suffering from this or any other malady.

Dysentery is an ancient word meaning a pathological enteric lesion, associated with bloody discharges. So long ago as the time of Marquette, medicine did not permit more than a symptomatic diagnosis. He may have suffered from one of the several now known bacillary dysenteries, or from an amoebic infection. As has been suggested too, he may have suffered from an infection with tubercle bacilli, a chronic disease at that time common in France; the bacilli having infected him in his childhood years.

But it may be worthy of note that many years earlier in 1542, DeSoto and his small army of Spaniards, negroes, and Indians together with horses, dogs and pigs from the West Indies wandered about this very region. It was about here too, the expedition had crossed the Great River, and their leader DeSoto had died of a fever (some reported a putrid fever) after a short illness. The Spaniards had already suffered greatly from disease. For in their records, they mention the Pestilence (the nature of which is unknown) and besides the mortality of the expedition was approximately one-half during the course of less than four years.

The records of Desoto are fairly explicit in stating that from time to time, both men and animals escaped to the surrounding wilds, as was true of the French and other explorers at a later time. Thus originated some at least of the courier de bois.

The possibility too, is not a remote one that some of the infections and epidemic diseases were brought into this territory and continued here from the West Indies Islands, which by the time of DeSoto had become heavily infected both by the diseases from the Spaniards and from the African slaves.

At any rate, this party of seven Frenchmen, still several hundred miles from the Gulf of Mexico, decided to turn back against the strong current of the Mississippi. Only with great exertion were they able to reach the mouth of the Illinois river which they ascended to the Indian town of Kaskaskia, far up on this River (near present Utica). Thus they were the first white men known to have entered the very heart of the Illini country.

Marquette continued to suffer from the illness, which he had acquired, or at least had first manifested, in the south on the Arkansas. Their stay therefore at Kaskaskia was brief on this account. They hurried north, guided by the Illini Indians to Lake Michigan (then the Lake of the Illinois) along whose western shores they ascended in their canoes to the Mission on Green Bay.

Here Marquette remained for nearly a year continuing to suffer from the dysentery, though slowly improving.

After these many months he was permitted to again return to the Illinois River Village and to set up there a mission, The Immaculate Conception, for the Illini Indians. He never forgot his early promise.

This decision to allow Marquette to return to the Illini country was probably the crucial factor in determining the final and fatal termination of his illness. His enthusiasm, no doubt, to return to the Illini overcome whatever reasons may have been offered by his advisers to confine him to the Green Bay Mission. At any rate, it was that

decision that, in all probability, furnished the conditions for the relapse which led finally to his tragic death.

On October 25, 1674, with his two faithful companions, Pierre and Jacques, Marquette descended the West shore of Lake Michigan on his last fatal mission. The weather became stormy and it was a long cold month before they reached the Chicago River. Marquette became worse and it was necessary to build a log hut where the party spent the winter. (Today a marker stands at this site which is near 22nd Street and the south branch of the River in Chicago).

Marquette at this point seems to have given up all hope of recovery. One ambition remained with him, namely, to proceed down to the Illini Village and there in a final triumphant display reveal the evidence for the final establishment of the Faith among the Indians of the Illinois. This he succeeded in doing in spite of his excessive weakness and emaciation. Indeed he seemed to improve a little and to feel stronger following this last final effort.

But soon the relentless disease returned more violent than ever. He could only make a last desperate and pathetic attempt to return to the Missions in the north, this time along the East shore of the Lake of the Illinois. Hordes of Indians in a farewell display of their primitive affection marched with him to the Lake from their villages. His strength permitted him only to reach the banks of the River, now as the Marquette River in the state of Michigan. Here he died, and after a temporary burial his bones later were removed by the Indians to St. Ignace.

For Father Marquette, this last grand Council with his beloved Illini Indians on the shores of the Illinois River was the supreme triumph in his short but dramatic life. For sometime he well knew that the tragedy of death was upon him. In his own way, however, in this remote wilderness, surrounded by his few faithful French companions, and by literally thousands of Indian savages, he met his fate, happy in the conviction that his life's mission had been fulfilled. For him, this mission terminated in this glorious spiritual and final triumph, which his lifes story so vividly portrays.

REPAIR OF NERVES IN THE HAND

The repair of divided nerves at the wrist and hand, and even in the fingers, can be done with excellent promise of successful regeneration. Care must be taken to accurately approximate the nerve. Only the finest suture material should be used and these sutures should pass only through the outer sheath of the nerve and should not strangulate the nerve bundles. Care must be used to preserve the rotation so that motor bundles are against motor bundles and sensory bundles against sensory bundles. The suture line must be free from tension and this is obtained by positioning the wrist or the elbow, or both, and maintaining the desired position by a plaster of paris splint for at least three weeks. Technically, it is easier to suture a peripheral nerve two to three weeks after it has been divided, than it is at the time of injury. The perineurium is very thin but following the division of the nerve it undergoes hypertrophy and holds sutures much better at the end of two to three weeks, and for that reason many investigators have reported superior results when nerve suture is delayed. We feel, however, that unless a specific contraindication exists, the nerve should be sutured immediately. The failure to achieve restoration of function in a divided nerve following suture depends upon one of three complications. Separation of the suture line following neuroanastomosis due to tension on the suture line, an error of rotation or excess scar tissue formation at the suture line. Excerpt: *Journal of the Tennessee State Med. Assn. Vol. 45: April 1952 #4 p. 134, THE MANAGEMENT OF INJURIES TO THE HAND, S. Benjamin Fowler, M.D.*

CORRESPONDENCE

CIVIL SERVICE COMMISSION SALARIES

Higher starting salaries are being paid to persons who pass current Illinois civil service examinations for Physicians I, Psychiatrist I, and Tuberculosis Control Physician I and accept employment with the Department of Public Welfare.

The new salaries were authorized by the Department because of the severe shortage of professionally trained medical personnel in State institutions.

The starting salary for Physician I is now $450, an increase of 90. Physicians eligible for a limited license under the new Limited Licensure Act are employed at $380, but without civil service status. Psychiatrists I and Tuberculosis Control Physicians I receive a starting salary of $500, an increase of 60.

Candidates for all three positions take an oral test and receive a rating on training and experience. Persons who pass both parts of the examination are offered immediate employment. A valid State license is also required.

Advantages offered civil service employees with the State of Illinois include promotional opportunities, low-cost living, paid vacations, regular hours, pay increases, and liberal retirement benefits. In addition, physicians and psychiatrists who satisfactorily complete three years of service with the Department of Public Welfare are eligible for an educational leave of absence with full pay to conduct research or educational projects approved by the Department.

Application forms may be obtained from the Illinois Civil Service Commission, Armory building, Springfield, or from local offices of the State Employment Service.

OFFERS BOOK TO FIRST 100 NEW MEMBERS

A patron of the Society for the Prevention of Asphyxial Death Inc., interested in making the causes and prevention of asphyxial better known among physicians of Illinois State, has kindly offered to donate a copy of the Art of Resuscitation, by Paluel J. Flagg M.D. to the first 100 Physicians who become members of the Society following the release of this information in the Illinois Medical Journal.

The book lists for $6.00 and volumes donated will be autographed by Dr. Flagg.

Physicians who wish to receive this autographed volume for their library are asked to apply for membership in the Society for the Prevention of Asphyxial Death Inc. enclosing membership dues of $5.00. Communications should be addressed to, Secretary, S.P.A.D. Inc., 2 East 63 Street. N. Y. 21, New York.

Dr. Chevalier Jackson in the preface of this book says, "To learn from this book means to save human lives".

CLINICS FOR CRIPPLED CHILDREN LISTED FOR JULY

Doctor Herbert R. Kobes, director of the University of Illinois Division of Services for Crippled Children, has released the July schedule of clinics for physically handicapped children. The Division will conduct 15 general clinics providing diagnostic orthopedic, pediatric, speech and hearing examinations along with medical, social and nursing services. There will be 2 special clinics for children with rheumatic fever and 1 for cerebral palsied children.

Clinics are held by the Division in cooperation with local medical and health organizations and groups, hospitals, civic and fraternal clubs, and other interested groups. Any private physician may refer or bring to a convenient clinic any child or children for whom he may want examination or may want to receive consultative services.

The July clinics are:

July 2 — Joilet, Will Co. T. B. Sanitarium
July 8 — Peoria, St. Francis Hospital
July 8 — East St. Louis, St. Mary's Hospital
July 9 — Hinsdale, Hinsdale Sanitarium
July 10 — Elmhurst (Rheumatic Fever), Memorial Hospital of DuPage County
July 10 — Springfield, St. John's Hosiptal
July 10 — Cairo, Public Health Building
July 11 — Evanston, St. Francis
July 15 — Danville, Lake View Hosiptal
July 17 — Rockford, St. Anthony's Hospital
July 22 — Salem, American Legion Hall
July 22 — Peoria, St. Francis Hospital
July 23 — Carrollton, Grade School
July 23 — Aurora, Copley Hospital
July 24 — Mt. Vernon, Masonic Temple
July 29 — Effingham (Rheumatic Fever) — Douglas Township Building
July 30 — Springfield (Cerebral Palsy), Memorial Hospital
July 31 — Bloomington, St. Joseph's Hospital

In carrying on its program the Division works cooperatively with local medical societies, hospitals, the Illinois Children's Hospital-School, civic and fraternal clubs, visiting nurse associations, local social and welfare agencies, local chapters of the National Foundation for Infantile Paralysis and other interested groups.

The Division of Services for Crippled Children is the official state agency established to provide medical, surgical and corrective and other services and facilities for diagnosis, hospitalizations, and after-care for children who are crippled or who are suffering from conditions which may lead to crippling.

MEDIASTINAL EMPHYSEMA

Mediastinal emphysema has almost invariably been regarded as benign. However, one should not lose sight of the fact that it not infrequently endangers life. This has been stressed by the Macklins, who have employed the word "malignant" in describing these cases. The importance of the recognition of evidences of circulatory and respiratory embarrassment should be emphasized, since surgical intervention in some cases may be life saving. In each case a fatal outcome was averted by the performance of a mediastinotomy. Again, a similar procedure was not unknown to Laennec, for he stated that "when the aerial infiltration extends to the external parts, a few pricks with the lancet at the lower part of the neck usually suffice to dissipate it." Excerpt: *The New England Journal of Medicine Vol: 241 Nov. 24, '49 #21 p. 818 MEDICAL PROGRESS Mediastinal Emphysema* Dr. Aisner and Franco.*

ORIGINAL ARTICLES

American Medicine on the March

C. Paul White, M.D.
Kewanee

The part that medicine has played in every phase of American life is a fascinating story, certainly more astonishing than any Horatio Alger ever created. More than that, it is the amazing success story of a large number of unselfish men who believed in the ideals of their profession and were willing to give the full measure of devotion to suffering humanity. It is almost an axiom that the wealth of a nation depends upon the health of the nation. Money alone is not wealth; it is simply a medium of exchange. Wealth in fact includes those things which provide not only for all of man's needs and his luxuries, but for a more abundant life.

During my thirty-five years as a practicing physician, I have made some attempts to keep informed of advances in my profession and also to observe the progress of society in its economic, social and political development.

Presidential address delivered before the Annual Meeting of the Illinois State Medical Society May 14, 1952, Chicago, Illinois.

The circulation of blood was known, the microscope had been developed, the germ theory of disease was determined long before American medicine became a distinct entity in the field of American science. It was in the 19th century, and especially after 1840, that American doctors began to make definite contributions to medical art.

Surgery, in those days, was well nigh a brutal procedure. The anesthetics were little better than the hyssop and vinegar offered the Christ on the Cross. Ether was discovered in 1842 by Crawford Long of Georgia or in 1846 by William Morton of Massachusetts, and anesthesia soon became the greatest achievement for the benefit of the human race up to this time.

Our freedom had been won. The father of our country had lost his life because of a misconceived idea that the letting of blood was the best method of treating a severe throat infection.

The Civil War was soon at hand and, although the suffering from major operations was somewhat lessened; the appearance of "laudable pus"

was still considered a good omen.

Railroads, beginning in 1802, were replacing stage coaches, but, in spite of their advantages, they increased the danger of spreading disease from one part of the country to another by human beings, and by the cargo which they carried; thus posing a serious problem for medical men. We find in the closing years of the 19th century, a more earnest effort to isolate specific germs, learn their habits and catalogue the symptoms they produced in the human body. But as yet, little had been accomplished in specific treatment.

By this time, two great political parties were firmly organized; both fervently resolved to maintain the dictates of the Constitution of the United States and its Bill of Rights, while differing fundamentally in the matter of free trade and high tariffs.

And so, we stand at the threshhold of a new century, which in the first 50 years, would create more and destroy more than was ever known to have happened before. And we have contributed to this history.

Who, at this time, would have predicted tractors, radio, television, much less insulin, or penicillin? Who could have foreseen that more patents would be granted for new inventions from 1940 to 1952 than had ever been granted before in this country? The basis for America's progress in this field and all other fields can be attributed only to the fact that individual liberty and human incentive have in this country, been given their widest scope.

No wonder that America has been recognized as the field of opportunity and optimism, for the people who constitute America are research-minded in all things — pessimism is the ally of a Joe Stalin. Our financial geniuses have not been asleep. In 1900 our estimated wealth was $81,100,000,000. In 1940, $400,000,000,000, and in 1946, $515,000,000,000. Recently our wealth was reported at nearly $900,000,000,000. This represents wealth in things. In addition, our national income is $239,000,000,000 as compared to $16,158,000,000 in 1900. So we may conclude that in the financial field, America has been making progress, even though an inflated dollar has created an artificial increase in our estimated wealth.

Socially, we have made many advances, for there has been a constant effort to provide better living and working conditions and to assure greater security to the working people of America.

In the field of general education it appears that we are failing to keep step with the progress that has been made on other fronts. It is not my purpose to criticize our educators either on the basis of what they know or the methods they use to disseminate their knowledge. However, it does seem that they should now recognize the fact that medical science has helped to produce boys and girls who develop much more rapidly than their parents—a fact which has most certainly outmoded much of our present pattern of education. Some students from 6 to 16 will easily follow our course of study, while others are not mentally equipped to benefit by such a course. Still others have special aptitudes and at the same time have certain deficiencies which suggest that they should be devoting their time to learning the trade to which they seem best fitted and, indeed, more interested.

Psychiatry, an important branch of modern medicine, points out that very often these apparently maladjusted boys and girls lose interest in formal education and that as a result a void is created in their lives which directly or indirectly is responsible for many forms of delinquency; such as alcoholism, drug addiction and crime. In this new field of medicine, men are seeking to eliminate these pitfalls for our youth by analyzing the child and suggesting corrections in the curricula which seem best suited to the needs and interest of the child. That this matter is very important is evidenced in crime reports that every seven minutes sees a crime committed by a youth under 21 years of age.

Politically, we have had a strange evolution, from that of pride in our national independence, to that of concern for a struggling, stumbling world which seeks alms, but in turn is unprepared to use them wisely.

Perhaps it is to modern industrialization, transportation, and communication methods that we owe our plight in a world where nations are no longer strangers, but near neighbors. We cannot demand, legislate, or buy good will. Their ideologies and patterns of life are not ours. Only by precept and example can we hope to win their support and create in them a desire to follow our democratic way of life. Are we creating that favorable opinion?

I spoke previously of our great wealth and of our large national income. A very great problem arises when we consider our national spending program. It is due to Congress and Congress alone that we can say that as yet we do not have greater deficit spending. I feel quite certain that no doctor, who rates himself a good American citizen, feels resentful over the taxes he is called on to pay if they are used to preserve America and the American way of life. But, when one man, following the dictates of his leader, spends $70,000,000 of tax money to propagate the false theory that American medicine has fallen down on the job and that our citizens are not receiving adequate medical care, it becomes certain that it is done for the sole purpose of gaining power by buying votes and thus perpetuating himself and his henchmen in public office. I am sure it is needless for me to discuss the situation in those European countries where Socialism has been tried and where human incentive has been stifled under its influence. In America, despite all the threats against it, medicine is on the march, and for the last 50 years it has not only been keeping step with progress, but has in many instances, far outstripped other competitive enterprises.

In 1900, the ten most prevalent causes of death in order of importance were:

	Rate per 1,000
1) Pneumonia and influenza	202.2
2) Tuberculosis, all forms	194.4
3) Diarrhea, enteritis and ulcers of the intestines	142.7
4) Diseases of heart, exclusive of the coronary arteries	137.4
5) Intracranial lesions of vascular origin (includes embolism and thrombosis, except puerperal)	106.9
6) Nephritis, all forms	88.6
7) Congenital malformation and diseases	74.6
8) Accidents	72.3
9) Ill-defined causes	67.4
10) Cancer and other malignant tumors	64.0

Closely following these leading causes and possibly of interest to you were the following:

Bronchitis	45.2
Diphtheria	40.3
Typhoid and Paratyphoid	31.3

In 1950, the ten most prevalent causes of death in order of importance were:

1) Diseases of the heart
2) Malignant neoplasms
3) Cerebral vascular lesions
4) Accidents
5) Diseases of early infancy
6) Influenza and pneumonia
7) Tuberculosis, all forms
8) General arteriosclerosis
9) Chronic nephritis
10) Diabetes

Thus it is observed that the acute infectious diseases have largely disappeared from among the ten most prominent causes of death, which is more responsible than any other thing in increasing life expectancy.

In the last 50 years, the crude death rate has declined from 17.2 per 1,000 population in 1900 to 9.6 in 1950. During this period, the population of the United States has doubled. In 1900, the life expectancy was 47 years, while in 1950 it was 68 years. To Dr. Dickinson of the American Medical Association we are indebted for the following statistics:

For every 12 funerals in 1900, four were for persons who had lived at least 50 years. In 1950, nine were for persons who had lived at least 50 years.

The older half of the people dying in 1900 had lived 30 years or more. In 1950, they had lived 66 years or more.

Since 1900, the entire population of the United States had doubled from 75,000,000 to 155,000,000, but since 1900 the population of 65 years and over has quadrupled from 3,000,000 to 12,000,000.

The lowest maternal death rate in 1933 was 4.3 while the highest rate in 1947 was 2.6.

All this is possible because we are now able to keep pace with the scientific world, making use of our ever-increasing knowledge in laboratory procedures, the control of infectious diseases, surgical techniques, and better understanding of physiologic processes. The quest for better health and longer life will never end. The physician will never be satisfied, for death is inevitable. His job goes on forever.

Recently, I listened to an essayist describing the importance of potassium in the cells to provide a more perfect balance. He said first it was sugar, then calcium, and sodium; and now potassium. In the future, other chemicals may be found that are equally important.

It is a disturbing fact that war has always played so important a part in stimulating scientific development. The atom bomb is a horrible example of such progress. But we, as medical men, have witnessed the advent of the anti-

biotics which has materially lessened the mortality rate among our troops and civilian population alike and also the use of atomic energy to diagnose and treat certain diseased tissues.

Only a few years ago it was necessary to send our patients to metropolitan centers for complete study, while today most of our hospitals in smaller communities have well-equipped laboratories, where blood chemistry, X-ray, electrocardiography, and other modern techniques may be done, and where trained men—thanks to the curricula of our medical schools and teaching hospitals—can well interpret the results and correlate their findings with clinical bed-side study.

The medical schools of today are contributing far beyond the call of duty to the postgraduate instruction of our doctors. This unselfish service is deeply appreciated by the general practitioner who recognizes the need to improve his own clinical knowledge. He is appreciative of those men and schools who give time and effort to the program of practical medicine conducted in the postgraduate courses of our State Society.

To our medical schools, we owe our everlasting thanks, for they are keeping American medicine on the march, not alone through the class room, but through their consulting service after graduation. Without their cooperation, we, as doctors, would certainly be severely handicapped.

Each of us holds in deep affection the medical school in which he received his education. Just as we owe much to our parents, we owe to our schools our loyalty and support, for they gave us birth into our profession. Today, they stand in dire need of financial help and must have it if they are to survive. I do not believe there is an able-bodied doctor who would permit his or her parents to become a ward of the state. Neither do I believe such a doctor would permit his alma mater to seek federal aid; at least not until he had given liberally to its support. It is a must that we should contribute to the educational fund of the American Medical Association.

During our lifetime, we have seen the acute infectious diseases all but controlled. Sulfanilamide was heralded as a wonder drug. Penicillin quickly followed. Now depo penicillin, aureomycin, terramycin, neomycin, and many other antibiotics are gradually but certainly becoming the specific drugs for treatment of the diseases caused by the aerobic, anaerobic, Gram positive and Gram negative bacteria.

We have also witnessed the development of vaccines which will largely prevent such infectious diseases as diphtheria, tetanus, whooping cough, scarlet fever, typhoid, and certain of the virus group. At the present time, there is every reason to hope that we will soon be able to control tuberculosis. This control of the infectious diseases has brought into focus other diseases which are just as fatal if not understood and eliminated.

We have observed that with the advent of insulin, those diabetics who previously had had a life expectancy of only a few years and rarely more than 30 years, may now, under proper control, have almost a normal expectancy. Metabolic disturbances such as gout, osteo-arthritis, and atherosis, have challenged our study of nutrition, and made us vitamin conscious. Probably we are being deluged by many false claims for their use; however, no one would question the value of vitamin D in rickets, or B_{12} in secondary anemia. Also Vitamin A, B, C, and K are of prime importance in tissue cell activity.

Socially, we are called on to partake of many foods and beverages which are detrimental to the physiologic processes of metabolism, but our alimentary tract is a "bear for punishment"; thus giving us 99 lives in which to correct our ill habits and return to a more practical and reasonable habit of eating.

We should lend our support to those doctors who are devoting their time to the study of nutrition, for in so doing, we may well contribute to longevity by eliminating or at least controlling those metabolic changes, which are crippling and even fatal if allowed to progress unmolested.

Malignant neoplasms are the second great cause of death today. Yet, an increasingly large per cent of patients, so affected, are being saved by early diagnosis and improved methods of treatment.

Heart disease, the first cause of death, like cancer, is attracting the attention of the public. They have learned that early diagnosis is of prime importance. This fact and the use of antibiotics are playing an important role in its prevention. Surgery is correcting many congenital deformities as well as valvular lesions, and the continuously decreasing mortality rate makes such operations relatively safe.

Geriatrics is another field of increasing importance, for millions would have been dead but for the progress of medicine in treating the intestinal disturbances of children, the control of infectious diseases and the improved surgical techniques for treating acute and chronic anatomical disorders. Today, we find many patients who are 80 years old or more reasonably safe operative risks. This situation could not exist without the science of medicine to steer them safely through a rugged and long life.

Our pharmaceutical and surgical companies must never be forgotten in any discussion of the progress of medicine, for scientific research has constantly stood at our backs. They have the scientific know-how, expert chemists and seemingly unlimited resources, and their willingness to cooperate with us has been a great factor in our success. Placing the new drugs and modalities in the hands of the general practitioner has given our patients the benefit of the latest development in scientific research and we are everlastingly grateful to these men and the companies they represent.

When one considers the many other equally marvelous advances in the treatment of diseases which have resulted in health and happiness for our people, we know that the assertions of Oscar Ewing and the other bureaucrats of the Federal Security Administration are not only astounding but false. They seek, by law, to regiment medical men, tell them whom they may treat, how they shall practice, and what they may charge, and they propose to do it by a tax of 3 per cent which will raise some $12,000,000,000 and maybe $18,000,000,000 according to their accounting system. And all this, despite the fact that no certified public accountant has ever gone on record with such figures.

Oscar Ewing seems unaware that the social security program is now bankrupt and that according to present estimates, the tax for that purpose will have to be raised from 1½ per cent paid by both employer and employee on a $3,600 salary to a like tax on a $6,000 salary and that the tax may well be raised to 6 per cent later.

He ignores the fact that England, after two years, has found that good medical care is impossible on anything like the amount of tax the people were able to pay. And so, Englishmen are getting limited service today while their medical men are, in many instances, unable to live on their meager incomes.

One of Oscar Ewing's main points is that the cost of medical care is prohibitive for the average family. He overlooks the fact that the American people are spending but four per cent of their total income for medical care, while a larger amount is being spent for alcoholic beverages and recreation.

The bill for physician's services is about half that spent for tobacco, and slightly less than the amount spent for personal care. The American people had more than four per cent to spend and it was their own decision, not that of the medical profession, nor of Washington welfare artists. They simply want luxuries, alcoholic beverages, tobacco and entertainment more than medical care.

Mr. Ewing probably never learned that the cost of living has risen 86 per cent since 1939, while the cost of medical care in the same period has risen 56 per cent. In view of these figures, why should Mr. Ewing wish to subsidize the health of the nation, if not for the purpose of controlling an immense political block and to establish socialism in America?

What have we, as medical men, done In November, 1948 when it became evident that the national administration was determined to put into legislation, a compulsory health insurance program, the American Medical Association had a rebirth. Its members realized that they had been too backward in telling the story of medicine and were too critical of those who did tell the story. Its public relations work had depended entirely too much on the reverence of a dependent public for the family doctor, and the mysticism attendant to the healing arts. Now the officers and trustees of the association, realizing the necessity for a more substantial public relations program, assumed willingly its added responsibilities and started an aggressive vocal program of action. Advertising, always frowned on by doctors, was launched when the firm of Whitaker and Baxter was employed to tell the world what medicine had accomplished, and what could be expected if the medical profession were left alone to pursue its own course in research and treatment.

They established a code of ethics in public relations, such as around-the-clock service, grievance committees where doctors and patients

could arbitrate their differences and settle amicably their disputes. They urged its members to take a more active part in community life, to promote voluntary insurance as the best way to allay the costs of catastrophic sickness, and to maintain the patients' self-respect.

What was the answer? Nearly 90,000,000 of the 155,000,000 people in the United States now have some form of voluntary insurance. And, considering those who are medically indigent and those now past age 65—neither of which group would be included in the Compulsory Health Insurance Program—*there remains only some* 30,000,000 yet to be sold on the voluntary plan.

That the public realized this new birth of *American medicine was apparent in 1950 when* they refused to send socialized-minded politi*cians to Congress.*

You may well ask yourself how could such a misconceived un-American idea have been born?

I am of the opinion it is because the true premise was never stated. *I feel that medical* men, instead of not doing an adequate job, have in fact, done their job too well. *According to the social and business standards of today,* we have made it possible for people to live *too long. I hasten to add that I want to live as long* as I can be useful. The young man of today, *instead of fearing death at 30, believes he has* a right to expect 66 full years if not eliminated by accident or constitutional mal-development. The 12,000,000 people who are now over 65 years of age, represent a sizable and powerful force in our American life, politically and economically.

Society and the business world, as determined by Federal Security Agency and public aid com*mission rulings, have retired these folks at 65* as worn-out machines. You and I know that a *large percentage of them have many years of* mental and physical stability left in which to complete a productive career.

If the politicians must do something, let them release these people at 65, condemned by law, from their geriatric slavery, by creating new and realistic standards by which one can measure their efficiency and thus restore their self-respect and remove a very heavy burden from our tax-weary citizens.

Sixty-five years is not the ultimate goal. With the broad field of progress in action in every department of medicine and surgery, and with the experience and techniques of the past 50 years as a basis, it is not unreasonable to believe that the advance in the next fifty years will far exceed our wildest speculation.

I was intrigued by a statement made by our *own Dr. Warren Cole who said, "In the future,* it is conceivable that the only use for surgery will *be to care for accidents, malignant tumors, and* congenital deformities." He is convinced that proper nutrition, the antibiotics, isotopes, and countless other modalities about which we now know so little, will revolutionize the future practice of medicine and surgery.

This discussion gives but a glimpse of the *marvelous development in medical science. But,* because it is dependent upon other factors of *national life, its future is clearly at stake. There* is an old saying that "There is nothing so changeless as change." We must certainly accept variation and alteration as natural processes in a progressive society. Change in itself is not alarming, but its direction is a matter of grave concern. There is no doubt that MEDICINE IS ON THE MARCH, but in sharp contrast, *there are many signs of deterioration in our na*tional life. This situation prompts the suggestion that "science take a holiday to allow society *to catch up with it."* However, this is surely a negative approach for all patriotic Americans, *and for medical men in particular. Socialism,* as old as the human race, is a *backward trend and it must be resisted. This is your problem* and medicine's future progress depends upon your acceptance of *individual responsibility.* For you are American Medicine.

Articular Disorders in Childhood

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Although chronic arthritis in children was first described by Cornil[1] in 1864, it was not until the classical description of Still[2] in 1897 that this condition was recognized as a disease of childhood. As is not uncommon in original descriptions of disease, the patients described represented what we would now regard to be a more severe form of the disease. The severe form as described by Still presents a picture of generalized lymphadenopathy accompanied by signs of systemic reaction and visceral changes (especially splenomegaly) in addition to the articular manifestations. As a result of our past teaching of Still's disease, we have observed that many children with rheumatoid arthritis remain undiagnosed unless or until they go on to the more severe form of the disease. It is with some of the problems of early diagnosis that we intend to deal today. This discussion is based on our longitudinal studies of children manifesting this disorder.

The precise incidence of rheumatoid arthritis in children is difficult to determine largely because we now feel that minimal cases are unrecognized. Coss and Boots[3] reported that 4.9% of all patients with rheumatoid arthritis seen in their clinic were children. Our experiences and those of Pickard[4] indicate that this disorder is probably more common than has heretofore been recognized.

That rheumatoid arthritis in childhood is a disease of protean manifestations in its early stages may be learned by observing the course of the disease over a period of months and years. It is not uncommon, for example, for the patient to develop fever as the earliest manifestation. This may be persistent or intermittent without any specifically demonstrable cause prior to the development of any localized findings. It is axiomatic on our service that any child with fever of undetermined origin is to be regarded as a suspect for the development of rheumatoid arthritis. If promient generalized lymphadenopathy is a concomitant, we are even more suspicious. If and when inflammatory involvement of serous surfaces other than joints (such as pericarditis, pleuritis, or peritonitis) develop, we may lean more strongly toward the diagnosis of rheumatoid arthritis. At this point visceral involvement, as may be manifested by splenomegaly, is considerably more helpful in rounding out the picture. The frequently described leukopenia may be present and again serves to further suggest the diagnosis. The sedimentation rate, again non-specifically, will be elevated and is helpful in suggesting the diagnosis.

It is important to deal with the articular manifestations of this disorder in somewhat more detail, since these have been so confused with the adult patterns or with the more severe form of this disorder as described by Still. It has been our observation, which is compatible with the observations recorded by Pickard, that the articular manifestations in childhood often are monoarticular at the onset. Further, a large joint such as the knee, the hip or the ankle may be the first to be involved. This is in distinct contrast to the usual adult picture of polyarticular involvement of small joints predominantly. This is not to say that the adult pattern of articular involvement never occurs in childhood, but more commonly the onset is with monoarticular involvement which may or may not progress to a more generalized polyarticular involvement.

It is interesting to note that when the joint involvement is monoarticular, the greatest confusion is with specific infectious arthritides and particularly tuberculous arthritis. The differentiation is, of course, important. The con-

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Figure 1. Laminogram of the temporomandibular joint indicating blunting of the condylar process characteristic of the advanced arthritic process.

fusion is, however, a legitimate one. Children with rheumatoid arthritis are generally tuberculin negative. With other specific infectious causes manifestations of acute inflammation are generally more prominent. In rare instances aspiration of the joint or even joint biopsy may become necessary to exclude specific infectious causes. Brucellosis may produce an intermittent hydroarthrosis, especially with hip joint involvement, which may be confusing. The employment of blood cultures, agglutination and skin tests for brucellosis are usually helpful in differential diagnosis.

Although it does not seem a likely source of confusion, differentiation from rheumatic fever may be troublesome. This is true regardless of how much experience one may have had with joint diseases, for it is not generally appreciated that rheumatoid arthritis in its early manifestations may be characterized by fleeting attacks of joint pain, redness and swelling associated with fever. If one superimposes on this picture the occasional patient with pericarditis, the separation of these patients from those with rheumatic fever is indeed difficult and may be accomplished only by the observation of the patient over a period of months. The findings become more persisent in the joints in the child with rheumatoid arthritis in distinct contrast to the migratory nature of articular manifestations in rheumatic fever.

Another disorder which may be confused with rheumatoid arthritis and which has not been recognized frequently in the pediatric age period is palindromic rheumatism. In this disorder the patient experiences abrupt onset of pain, redness and swelling of joints. Fever is usually not present or is minimal, and the attack subsides as abruptly as it came on after a period of 24-36 hours. These attacks are usually recurrent. It is significant to differentiate this syndrome from rheumatoid arthritis, since residual articular pathology has never been observed. Therefore, the prognosis is very much more favorable.

Of considerable interest to us have been growth studies in children with rheumatoid arthritis. Kuhns and Swaim[5] some years ago observed that generalized inhibition of growth may develop in children with this disease. They also called attention to the fact that if specific joint involvement was severe, localized growth disturbances, by interference with epiphyseal growth, may develop. Perhaps one area in which such growth disturbances occur most commonly, and this has not been previously described, has been in the temporomandibular area with the resultant slowing of mandibular growth. These observations are the result of cooperative studies in the Departments of Orthodontia and Pediatrics at the University of Illinois.[6] Our attention was first directed to this dysplasia of mandibular growth when we observed a relatively high incidence of mandibular underdevelopment in some of the children with rheumatoid arthritis whom we were observing. On further inquiry into this problem we found that since mandibular growth results from endochondral bone formation at the mandibular condyle, involvement of the temporomandibular joint in the arthritic process may result in diminished mandibular growth. The illustrations indicate the flattening of the condyle which can be demonstrated radiographically in these patients and the resultant underdevelopment of the mandible (Figure 1). This results in the characteristic facial deformity which the Germans have termed "Vogelgesicht." In the past these children have been regarded as having congenital micrognathus. It is fortunate that in at least one instance we have longitudinal studies both of the face and skeletal profiles, which indicate rather conclusively that this is not the case, since prior to the onset of the disease process the facial and skeletal relationships were normal. The deformity developed as the disease progressed as may be observed in the illustrations (Figure 2).

Figure 2. Lateral profile photographs of patient at 5, 11, and 16 years of age illustrating progressive deformity of the mandible due to involvement of condylar growth centers.

Temporomandibular joint involvement has been well described previously. In Still's cases 14 percent manifested such involvement. Pickard found 17% of his cases to demonstrate such pathology. The effects on growth however were not described. Recently we have observed two children with mandibular underdevelopment in whom we strongly suspected the etiological factors to be localized articular involvement when the history seemed compatible with rheumatoid arthritis. We did not feel justified in making this diagnosis, however, until these children obliged us by ultimately developing other articular involvement. These patients again illustrate that monoarticular involvement is not uncommon early in the disease and that furthermore we must think of joint involvement in areas not concerned with locomotion or manual skills.

Our ideas concerning the prognosis for children with rheumatoid arthritis must undergo considerable revision. With earlier observation of these patients, recovery will probably be noted more frequently. Pickard observed 40% of his patients to recover completely. Our observations would be comparable with this prognosis. The commonly held opinion that the disease will subside with puberty is not entirely valid since recurrences may occur following adolescence. The disease does tend to be self-limited, however. Concerning the involvement of various joints and the recovery of function, recovery seems to be poorest for elbows, and wrists and better for ankle and knee joint involvement.

In spite of recent advances, the therapy remains largely non-specific and supportive. The improvement of general health of the child by appropriate therapy for any concomitant infectious processes and the establishment of adequate nutrition are believed to be desirable. Although rest for the patient is indicated, particularly during the acute phases of the disease, rigid immobilization of joints has not seemed to be helpful for our patients. Prolonged immobilization after the acute disorder has subsided, as reflected by normal temperature and normal sedimentation rate, may accentuate joint deformity. We think prolonged inactivity is productive of psychological problems which further intensify joint immobility.

Intensive vitamin D therapy we believe to have no place any longer. We have reported one patient to have developed severe evidences of vitamin D intoxication associated with prolonged and intensive vitamin D administration[7].

Since the report of Hench and his collaborators demonstrating the effectiveness of Cortisone and ACTH in relieving the manifestations of rheumatoid arthritis in adults, we have had some experience with these compounds in the therapy of children. The relief of joint stiffness, swelling, pain and redness, the drop in temperature and the overall improvement of a patient within a few days are abrupt and dramatic, as is evident from the illustrations. Cessation of therapy, however, is usually associated with the return of

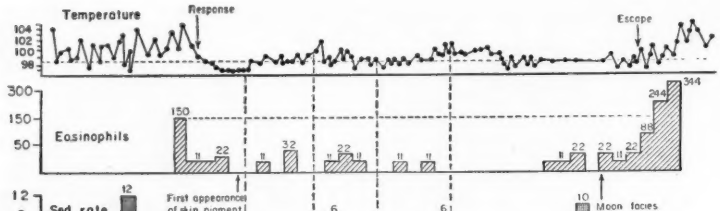
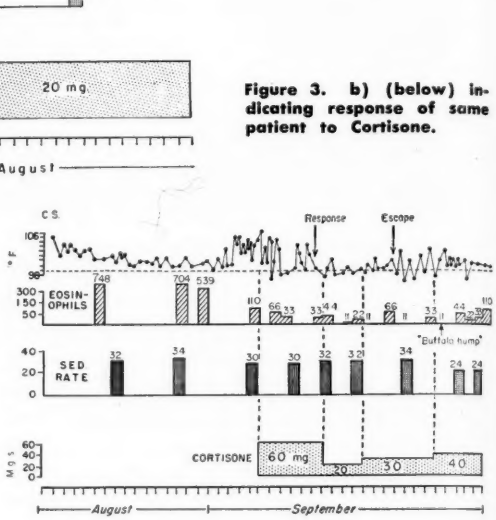


Figure 3. a) Chart indicating response of patient to ACTH.

Figure 3. b) (below) indicating response of same patient to Cortisone.



the disease process. The illustrations indicate clearly that if one attempts to control the disease process by long-continued administration that two problems ensue: 1—the patient "escapes" from therapy and no longer responds to a previously therapeutic dosage, or 2—the patient develops signs of physiologic excess of these endocrines as is manifest by pigmentation of the skin, "moon face," "buffalo hump" of the neck, and masculinization. We therefore conclude that these endocrines are of value for experimental study but that at the present time are of little practical value in the management of these patients. Greater experience and the availability of oral and long-acting preparations of these hormones may increase their value in practical clinical management.

All of the patients under observation by us manifest psychological disturbances. Although we are aware of psychosomatic formulations concerning the etiology of this disease, we are not as yet in a position to say which of these disturbances are primary and which are secondary to the disease process. The management of these children therefore remains a generally supportive one in which the physician should attempt to provide for the improvement of the physiological and mental health of the patient. He may thereby minimize many of the serious consequences, particularly the unfortunate joint immobility, which have been observed so frequently in the past.

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Medical Aspects of Nuclear Energy

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In 1895 a European scientist, Roentgen, was experimenting with a Crooke tube. A short distance away he noticed flourescence in some crystals. This led to the belief that from this glowing tube some type of rays were striking the crystals and causing a reaction. Further investigation led Roentgen to believe that he had produced, heretofore, an unknown quantity. The term "x-ray" became known at this time. The discovery of these x-rays opened new fields of research.

One year later Becquerel discovered natural radioactivity. He is credited, also, with the discovery that radioactivity produces a biological effect. History has it that Becquerel was carrying a small vial of radioactive material in a suit pocket. After a period of time he noted that the skin underlying was red. He then concluded that the emanations from the radioactive material in his pocket produced the skin changes.

Following these discoveries, radiation was used extensively as a diagnostic and therapeutic measure. In many cases unfortunate and disasterous results were obtained. Ionizing radiation was used on practically all known diseases at this time, and it was not until 1903 — 1905 that the real danger of radiation became known. It was learned that the blood forming organs and reproductive systems were far more sensitive to radiation than skin.

The atomic bomb differs little from high explosive type of bomb. The primary difference, of course, is the presence of radiation at the moment of detonation and shortly thereafter. If one was to examine the atomic bomb as a casualty producing agent, it would be evident that there are actually 5 casualty producing effects:

1. Secondary blast
2. Thermal energy
   a. ultra violet
   b. infra red
3. Visible light
4. Radiation
5. Primary blast

This list represents the 5 casualty producing effects of the bomb, in descending order of importance.

It has been estimated that 50% of the casualties in Japan were due to secondary blast (collapsing buildings, flying debris, etc.)

Japanese buildings were inflammable, flimsy, and crowded. The Japanese workers lived in crowded quarters, and did much of their cooking over open fires, thus, following the explosion over Hiroshima and Nagasaki, many large fires were started and burned severely thousands of individuals, who were trapped in the buildings.

Thermal energy accounted for thousands of casualties. Occuring almost simultaneously with the explosion was the release of ultra violet and infra red rays of extremely high intensity. It has been stated that the temperatures reached at the point of detonation approach that of the sun. The thermal energy released was of the instantaneous type, having only a matter of a few thousandth of a second to act. In spite of the short duration of the rays, the damage was tremendous. The physiologists have found that temperatures of 4000 degrees C acting for .5 seconds is necessary in order to produce a second degree burn. Clothing was ignited as far as 4000 feet. Telegraph poles were scorched within a radius of 10,000 feet.

Visible light did not actually produce permanent casualties. At the instant of detonation, a blinding flash of light of extreme intensity was released. The ball of light rapidly expanded from a few feet in diameter to one of many hundreds of feet in diameter.

The type of casualty produced was that of

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temporary blindness. No cases of permanent blindness were recorded. The seriousness of this temporary blindness was reflected in the number of individuals who were unable to evacuate themselves, and were destroyed or injured by fires.

It has been estimated that radiation produced, approximately, 15% of the total deaths in Japan. The source of the ionizing radiations that resulted from the detonation of an atomic bomb was the fissioning of the Uranium 235 or Plutonium and the fissioned products. From the detonation of the bomb there are a number of different types of nuclear radiations generated.

First, and most important, are the gamma. Gamma rays are high energy electromagnetic radiations differing little from x-rays; the primary difference being that gamma has more energy, thus, more penetrating ability.

Prompt gamma rays are the results directly of the fission reaction. These are emitted almost instantly, with the detonation due to the extreme speed of the fission reaction. The delayed gamma rays are a result of the fission products in that the fissionable material split into two atoms. This split does not always take place in the same way, consequently, many different elements are produced. Most of these elements produced are unstable, and radioactive, and disintegrate by emitting gamma or beta rays or both. The rate of decay is different for all elements, thus, accounting for the presence of gamma rays from a few thousandth of a second to many years. Actually, following an atomic bomb explosion, the instant or prompt gamma radiation are the most important. In an air burst, the fission products are carried to heights of many thousands of feet, and become so diluted by air that the "fall out" is of little importance. Like gamma, there are two major types of neutrons given off. First, prompt or instant neutrons; these are a direct result of the fission reaction. A neutron is a high energy neutral particle. These particles have great penetrating ability, but somewhat less than gamma. Its penetrating ability is due primarily to its electrical neutrality and high energy. Neutrons are slowed down or captured by colliding with molecules or atoms of matter. This collision usually results in inducing radioactivity in the target matter.

The second type of neutrons in the delayed, which result as products of decaying of some of the fission products. They may, like the prompt neutrons, be high in energy.

The fissioning, and the fission products, thru their decay, emit in addition to gamma, beta particles. A beta particle is a very high speed electron. In spite of the fact that beta particles are high energy, their penetrating ability is slight. It is estimated to be only a few meters in air. The primary damage cause by beta is due to ingesting or inhaling beta emitting substances.

The last type of nuclear radiation released is alpha. Alpha results from the decay of any unfissioned Uranium or Plutomin following a detonation. Like beta, alpha has a very short range, but if alpha emitting substances are ingested or inhaled, the alpha may be a serious hazard.

The biological effect of radiation is due to the absorption of energy by the tissue. The damaging effect is produced by the high energy particle or ray striking an atom, and knocking out an electron. The result of this collision is the production of a positively charged particle, and negatively charged particle or if you will, an ion pair. These ion pairs are now capable of entering into abnormal chemical reactions or forming complex molecules toxic to the cell.

The various types of ionizing radiation do not all produce ion pairs in the same manner. Alpha and beta produce ionization directly. They strike or dislodge an orbital electron, thus producing an ion pair. Gamma and neutron ionize by means of striking a lightly held electron and imparting, for the most part, all of their energy, thus, accelerating this secondary charged particle, which inturn strikes many other atoms and produces ionization. This process is known as the Photo-electric effect. Actually there are two other methods by which gamma produces ionization — Compton recoil and Pair production, but we are primarily interested in the photoelectric effect.

Nuclear radiation or the radiation emitted from the detonation of the atomic bomb, is usually further divided into the two types of radiological hazards.

First: *External hazards.*— This merely designates the source of the radiation, thus. any radiation that is external or outside of the body, and is capable of penetrating the skin, and

deeper layers of the body is known as an external hazard. It is obvious, then, that neutrons and gamma constitute an external hazard. They are capable of penetrating the body and ionizing deeper tissues.

In an atomic burst, radiation damage is almost exclusively produced by external hazards and especially by gamma rays. This, of course, is due to the extreme range of gamma rays in air and in tissue and its ability to ionize in the tissues.

Second: *Internal hazard.*—The source of the radiation is taken into the body. This is accomplished by ingesting, inhaling or taking the material in by means of a break in the skin. Internal hazards then are the alpha and beta emitting substances. Ordinarily, these elements after gaining entrance into the body, are very slowly excreted, and many are absorbed and deposited in the bone, where eventually extreme damage is done. There is no known way that excretion of these elements or their decay rate be speeded up. An excellent example of this type of damage occurred several years ago in the people employed to paint watch dials with radium salts. These people would tip their brushes with their tongues. Eventually, they took into their bodies a considerable quantity of radium salts, which after a few years began to show up in severe bone damage, leading to death.

It is against this type of hazard that we have some very definite protective measures. A few simple measures, such as:

1. Nothing by mouth while in a contaminated area.
2. Protective clothing with no pockets and a minimum of seams.
3. Wearing of a gas mask or respirator to filter out dust.
4. Covering of all breaks in the skin, and finally a shower followed by, monitoring with an instrument to detect any radioactivity on the skin. Then a complete change of clothing, when leaving the area will protect one against internal hazards.

In August 1945, an atomic bomb was dropped over Hiroshima and Nagasaki. At Hiroshima it has been estimated that from 60,000 to 80,000 died, and 70,000 to 100,000 were injured. What type injuries were seen? They may be divided into 3 types:

1. Trauma
2. Burns
3. Radiation

Trauma, in this group, are injuries resulting from flying glass, falling timbers and pressure changes. Many people suffered from lacerations, contusions, fractures and abrasions, as a direct result of trauma. As for pressure changes, this mechanism was of little consequence. Autopsy reports show that total of 17 ear drums were ruptured at Hiroshima and 22 at Nagasaki. As you know, the ear drum is the organ that reflects pressure changes first in our bodies. This is difficult to understand because we know that structural damage was great, yet biological damage due to pressure change was slight.

It is thought by some, that acceleration of the pressure wave has some effect. The explosion of a high — explosive bomb produces an extremely rapid pressure wave, whereas, an atomic bomb explosion does not produce the rapidly advancing wave front.

Burns were the result of radiant or thermal energy, the source of which, was the explosion of the bomb, and flame burns. The burns resulting from thermal or radiant energy were due to high intensity radiations of ultra violet and infra red. They were of the flash or profile type, or in other words, only the surfaces exposed to the direction of the source were burned, some quite severely. It was found that loose fitting light colored clothing gave some degree of protection.

Gamma released at the instant of explosion, and for the following two minutes, was very high energy, thus, highly penetrating. The clinical effect of exposure to this type radiation resulted in a syndrome or symptom pattern given the name of radiation illness. Thru the knowledge and experience with x-rays it has been determined that the least amount of total body radiation clinically detectable is about 25 roentgens. The median sickness dose (total body) is about 200 roentgens. The median lethal dose is 400 to 450 roentgens, and the 100% lethal dose is in the range of 700 roentgens. Following exposure to anyone of the above name higher doses results in a more or less set pattern of symptoms. Nausea and vomiting on the first day of exposure. Generalized malaise appears on the 1st or 2nd day. On about the 3rd day the patient begins to feel better, and actually, is fairly

free from complaints until about the 10th to 14th day, when nausea, vomiting and malaise reappear. Epilation soon becomes evident. Shortly thereafter, diarrhea changing to bloody diarrhea appears, as do the symptoms of severe anemia. Pupuric spots that appear on the face and trunk usually are the signs of the hemorrhagic phenomenon so commonly found in radiation sickness. It is only a short time later that signs of secondary infection appear. If the dosage has not been too great, and the toxemia due to infection is not too great, the patient may hover between life and death for many days, and then slowly show signs of recovery. If the dose of ionizing radiation absorbed is a lethal amount, then the course of the illness is generally down hill until death occurs.

Therapy of radiation illness is at best very poor. A great deal of research on this problem is underway at the present, but no definite measures are available. In general our therapy is symptomatic in nature. It consists primarily of blood replacement, maintaining fluid and electrolyte to balance, controlling infection, and maintaining adequate nutrition. Therapy is a difficult task, the anemia is so great, and the white count is so low, that the natural defenses against secondary infection are non-existant. Nausea and vomitig may be so severe that the fluid and electrolyte is markedly upset, as is the nutrition. The simple procedure of blood replacement is very helpful, but the quantities of fresh whole blood necessary for adequate replacement are so far beyond our supplies, that it is almost hopeless to believe that more than a few radiation sickness patients could be given enough to be of any benefit.

Diagnosis of radiation illness is dependent primarily on the knowledge of an atomic explosion or exposure, and serial blood counts. The symptomatology of radiation illness follows a more or less set pattern, and complete knowledge of the syndrome is quite helpful. Diagnosis by laboratory means necessitates hourly blood counts. The first thing noted is a prompt drop in lymphocyte count. The degree is dependent upon the dose of radiation. Generally speaking the lowest count is obtained somewhere between 24 and 72 hours following exposure. If the dose is non-lethal, one will see a beginning increase after a few days. Early there is a slight granulocytic leukocytosis. After this slight increase, there follows a progressive decrease in granulocytes. The extent of this drop is dependent on the amount of radiation absorbed. In non-lethal doses, an increase will develop somewhere in two to three weeks. The change in number of platelets, morphology of red cells and whites occurs only after several days following the exposure.

In conclusion, it is quite apparent that survival of an atomic explosion is dependent upon one thing, radiologically speaking, that is the dosage of ionizing radiation absorbed. Since it is highly impractical to provide individual protection, we then must depend upon collective protection. Bomb shelters, built to withstand the effects of blast, and of such material to afford shielding from ionizing radiation. Regardless of what protective measures that are provided, we will still suffer many casualties. It is my opinion that the number of casualties can substantially be reduced by two measures. First, a satisfactory public education program to provide the public with knowledge concerning atomic warfare. This, I feel, will aid in combating the psychological effect of an atomic explosion. It is felt by many that the psychological effect of the bombing in Japan played a major role in the course of the war, as well as increased the casualty rate. Secondly, a well planned civilian defense. An adequate civilian defense will reduce casualties by a large factor. We of the medical profession have a definite public duty to perform by actively aiding in both programs outlined: 1.) public education, 2.) civilian defense. Therefore, I urge all of you to obtain, and digest all of the information available concerning atomic warfare in order that you will be able to lead in formulating a civilian defense program, as well as aid in an atomic disaster.

Traumatic Injury to the Cornea:
Treatment by the General Practitioner

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The general practitioner is often confronted with the problem of traumatic injury to the cornea and, especially in smaller communities, must accept the responsibility of diagnosing and treating them. The responsibility is a serious one, for such injuries, particularly when they occur in the pupillary area, may result in loss of vision through infection, ulceration or scarring.

The cornea has no blood vessels. Its nutrition comes by way of the lymphatic system. It is richly supplied with branches of the ciliary nerves. The outer junction of the cornea with the sclera is the limbus. There are five layers of tissue in the cornea. From the outside these are: 1: The epithelial; 2. Bowman's membrane; 3. the proper substance, five times thicker than any other and composed of connective tissue arranged in lamellar form; 4, Descemet's membrane, thin and elastic; 5. the endothelial.

Many types and degrees of corneal injury may confront the general practitioner. When the injury is severe, as in the case of deep penetration of the eyeball with a foreign body, he should confine his efforts to first aid, relief of pain and control of any associated hemorrhage, and send the patient as soon as possible to an ophthalmologist.

However, the more superficial injuries, cuts, abrasions, shallow penetrating wounds, often with a foreign body embedded, may often be successfully treated in the physician's office.

Such injuries, if not quickly and properly cleaned, may develop into corneal ulcers, iritis, keratitis, hypopion keratitis and other severe conditions.

Diagnosis. The history of the injury is important. The nature of the blow, the explosion, the flame, the flying metal or other material will often help determine the course of treatment.

Routinely, it is best to stain the cornea with a 2 per cent solution of fluorescein, which imparts a green color to the abraded tissues without damage to the epithelial layer. This outlines the wound more clearly, and often is especially valuable when a foreign body is embedded in the tissue.

Treatment. If a foreign body, such as a bit of steel, is embedded in the cornea, the eyeball should be anesthetized with pontocaine, butyn or cocaine. Then the embedded material can be removed with a pointed eye spud or needle by going underneath and raising the object. Do not scrape the instrumet over the surface, which might cause additional damage to the tissue.

Sometimes there is a yellow stain around the wound caused by rust or heat. This should also be removed.

Many of these cases are not seen for two to four days after the accident and infection is already obvious. A bacteriological study is highly important.

In superficial injuries with or without complications, the wound should be cleaned with warm saline solution and then treated locally with an antibiotic. Either penicillin, aureomycin ½ per cent, terramycin, sodium sulfacetamide 30 per cent, bacitracin, or cortone 20 per cent in suspension, will combat almost any infection in these cases. Penicillin ointment should be used with a dressing overnight. All signs of infection should disappear within 48 hours. If there is any indication of a purulent infection, an eye-pad should not be used.

In more severe cases, where there has been delay in seeking treatment, examination may show a contracted pupil with much pain, congestion, lacrimation, and dimness of vision. One drop of 1 per cent Atropine solution should be used locally to dilate the pupil and relieve pain. If ulceration has set in, the patient should be hospitalized. Penicillin (100,000 units per c.c. in distilled water) should be given two or three

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drops in the conjunctival sac every hour.

Subconjunctival injection of 0.25 c.c. of a solution containing 300,000 to 500,000 units of penicillin, 0.25 c.c. adrenalin 1:1,000, and 0.25 c.c. novocaine 1 per cent will quiet the burning sensation and pain. This may be repeated every 24 hours for three days. Every one to four hours the antibiotics referred to above should be applied locally in solution or as an ointment, as preferred.

If and when the ulceration shows improvement, the frequency of the treatment should be reduced to every four hours with penicillin ointment and a dressing at night.

If the ulcer does not improve, but is spreading, it may indicate the serpiginous type which is the result of a pneumococcal infection; this can spread over the pupillary area in 24 to 48 hours. Treatment change may be indicated, including the advice of an eye physican.

In hypopyon keratitis, if any substantial amount of pus appears in the lower part of the anterior chamber, and it does not respond to antibiotic therapy, a keratone incision should be made at the limbus. The pressure of the acqueous humor will then usually wash out most of the pus.

The thermophore, though not so popular as it was 25 years ago, is still used by some physicians. It has been largely replaced by specifics today, but it was once used when the ulcer became well defined and other treatment had failed.

Burns involving the cornea should be cleaned with an antiseptic solution and any fragments of tissue removed with an iris forceps. Hydrosulphosol (oil base) usually gives gratifying results.

A word of caution regarding the sulfonamide drugs and the various newer antibiotics may seem superfluous, but the following case illustrates the need for seeking evidence of any allergies to these substances:

A woman, age 40, was referred with eyes inflamed, severe lacrimation, clouded vision and the lids adherent to the eyeball. Inquiry revealed that she had been treated with some sulfa drug for another condition and that the inflammation appeared after a few days' treatment. Her physician had given her sulfathiazole ointment, then ordered more local applications of sulfathiazole ointment after breaking up the adhesions. The condition became worse however, and the adhesions re-appeared. On the history, the use of sulfathiazole was stopped and the condition cleared quickly. The adhesions were broken up again, but they had left scar tissue covering about three quarters of the pupillary area and obstructing vision, though she was still able to perform some of her household duties.

Deep penetrating wounds usually result in a major loss of vision, but that is not always true. Recently a man of 30 was struck in the eye with a piece of bailing wire. About 4 mm. of the iris was prolapsed at the limbus. My first thought was to clip the protruding portion, but after cleansing it thoroughly, I instilled 3 or 4 drops of eserine and applied a dressing with eserine ointment. In 24 hours the iris had contracted and the eye healed perfectly with normal vision.

Sometimes it is better to wait before undertaking any radical procedure. A few years ago a small boy, wounded in the eye with a BB shot, was referred by the family doctor, who believed the eye should be removed as the anterior chamber was filled with blood and x-ray studies showed a dark shadow in the posterior chamber. It was impossible to find a wound of entry for the shot, however, and I advised a few day's delay. After that period, a second x-ray failed to reveal any foreign body and the blood in the anterior chamber was resorbed. Later a cataract was removed with good final results.

SUMMARY

1. Early diagnosis and treatment are essential in traumatic corneal injury.

2. If infection is severe, bacteriological studies should be done.

3. If ulceration and complications appear, the patient should be referred to an ophthalmologist.

4. If one antibiotic does not produce results in 48 hours, another should be substituted.

The High Cost of Hospital Care

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I need not remind anyone in this audience that the cost of hospital care has been climbing during the past several years. This concerns all of us for several reasons including particularly the fact that this increase in cost of hospital care is often used by the proponents of socialized medicine as an excuse for adopting nationalization of medicine. However, it should be emphasized that the medical profession is not to blame for this rise; it is explained primarily by the increase in wages, and other factors in the rising cost of living, related to inflation. Accordingly, in a consideration of this problem, we should consider the increase in cost of living and compare the various costs with each other. Reference to Table 1 reveals that during the period 1935-39 to 1950 the cost of living increased 72 per cent. The cost of physicians' fees rose only 40 per cent, whereas the cost of hospitalization increased 135 per cent. The encouraging feature of this increase in cost lies in the fact that the weekly earnings of the people increased 165 per cent.

Table 1.
A COMPARISON OF COST OF LIVING WITH COST OF MEDICAL CARE 1935-39 TO 1950

COST OF LIVING ROSE	72%
PHYSICIANS' FEES ROSE	40%
HOSPITAL COSTS ROSE	135%
WEEKLY EARNINGS ROSE	165%

Most of the figures in Table 1 and Table 2 have been secured from data assembled by Dr. Frank G. Dickinson.[1]

Table 2.
CONSUMERS EXPENDITURES
(In Billions of Dollars)

	1930	1950	% Increase
TOTAL EXPENSE			
MEDICAL CARE	2.9	8.5	193
Physicians' Fees	0.9	2.4	166
Hospital Expense	0.4	2.0	400
Drugs	0.6	1.4	133
Other Expenditures	1.1	2.8	155
TOTAL EXPENDITURES	70.8	193.6	322

Reference to Table 2 reveals an increase of 193 per cent in the total cost of medical care between the years 1930 and 1950 although the increase of total expenditures of the people in the United States increased by 322 per cent. Although the increase in total expenditure of the population is greater than the increase in expenditure for total medical care, the disturbing feature lies in the fact that the actual increase in expenditure for hospital care during this period was greater than the increase in total expenditure by the people of the United States. However, it must not be forgotten that during the past 20 years people have become much more "hospital conscious"; they go to hospitals for many less serious illnesses than previously. This one factor alone accounts for a very large percentage of this increase in expenditure, but likewise has greatly improved health conditions.

In analyzing the expenditures in a slightly different way, Dickinson[1] has noted that for every dollar spent for medical care in 1930, 32 cents were paid to physicians as compared to 28 cents paid to physicians in 1950. This represents a decrease of 8 per cent. On the other hand, during this same period, of each dollar spent for medical care in 1930, 14 cents were spent for hospital care but in 1950 23 cents were spent for hospital care. This represents an increase of 64.3 per cent.

From the Department of Surgery, University of Illinois College of Medicine, Chicago, Ill. **Presented at the 25th Annual Meeting of the National Conference on Medical Services, Chicago, Ill., Feb. 10, 1952.**

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TABLE 3.
COST IN HOSPITAL A.

CHARGE FOR SINGLE ROOM $10.75 to $30. per day (COST $20). Routine charge of $9.25 for lab. tests (35 or more); EKG and BMR $7.50 each - recheck $3.75
X-RAY G. I. SERIES AND GALL BLADDER $50, ALONE $24; Chest Film $8, except 4 x 10 $3.75 to $4.50

In Tables 3 and 4, I have listed the charges made in two private hospitals here in Chicago. In hospital A the charges made per day range between $10.75 and $30.00 per day. The actual cost to the hospital is $20.00 per day. In hospital B the charges range between $16.50 and $20.00 per day, with an actual cost to the hospital of about $20.00 per day. The difference in charges made by these two hospitals lies in the fact that hospital A makes a routine charge of $9.25 for all laboratory tests (except complicated ones like EKG and BMR), and hospital B makes a charge for every test made. This difference in charge will reflect considerably in the matter of balancing the budget of the hospital, because keeping the number of laboratory tests requested by the physician down to a low minimum will be of definite financial aid to hospital A, whereas it might be a financial detriment to hospital B. Disregarding this difference in the financial set-up of hospitals, we must still limit the number of laboratory tests requested of the laboratory for the patient because this limitation will decrease the cost of hospital care, although certain hospitals may be protected by their method of charging.

MECHANISMS UTILIZED IN REDUCING HOSPITAL COST

I am not a hospital administrator but perhaps it is just as well I am not a specialist in this field since I might be able to look at the problem with a much less biased eye. In the first place we must appreciate that most hospitals require an occupancy of 75 to 85 per cent to break even financially. They are not allowed to set their rates high because they are non-profit institutions, and therefore will lower rates for the patients rather than allow accumulation of profits during periods of prosperity.

1. Compare Balance Sheets With Financial Statements Of Another Hospital. — If I were chairman of a board of trustees of a hospital showing a serious unexplained deficit, one of the first things I would wish to do would be to compare the balance sheet with an institution of similar type. To be of value the various expenditures would have to be broken down into various categories such as food, linens, equipment, etc. If a significant discrepancy is found in any certain category there would be circumstantial evidence that very poor buying was being executed in that department or that an actual leak existed. A leak may be caused by actual theft or by overcharge, with commission sent to the buyer. Obviously, such irregularities are much more apt to exist in large public hospitals than in small private ones.

TABLE 4.
COST IN HOSPITAL B.

CHARGE FOR SINGLE ROOM $16.50 to $26 per day (COST $20) In 2 bed room $12.50 to $14; in 8 bed room $9 per day.
CHARGE $5 FOR ROUTINE BLOOD AND URINE. ALSO - Kahn $1; Total Proteins $2.20; A-G ratio $8.80 CO_2 $2.75; Icterus Index 0.60; Potassium $2.20; NPN $3; EKG $6; BMR $5; Dressings $2 for each patient.
X-RAY UPPER G. I. $5.50 to $10; COLON $5.50 to $10 Chest $8 to $10. Gallbladder $11.50 to $16.

2. Establish Good Buying Contacts. — Loss due to poor buying may be traced to lack of conscientiousness and ability on the part of the buyer, or to poor markets failing to give proper prices for purchase of material in large volume. A large amount of difficulty in this category is related to inexperience, particularly in finding business houses giving good prices.

3. Check On Honesty Of Personnel. — When an irregularity has been discovered in the expenditures of a certain department, an early inclination is to attempt to set up a watch for thievery on the part of the personnel, but seldom will it be possible to catch the individual. Much more effective in detecting leaks of this type is the comparison of cost figures from that with the figures in a similar institution. Of equal value is the comparison of expense figures of the various departments with the expenses incurred during previous years. Any sharp increase over the expected amount incurred by increased cost of living, or increase in occupancy of the hospital would have to have an acceptable explanation.

4. Establish Good Bookkeeping. — Before com-

parison of expenses in various departments within the hospital can be made with similar expenses in another hospital of the same type, the expenditures will have to be broken down into various departments. Likewise good judgement will have to be exercised in establishing and maintaining certain expenses in a given department. Without good bookkeeping the comparisons mentioned in the preceding paragraphs can not be made effectively.

5. Offer Inducements To Employees To Obtain Efficiency In Their Work. — Often inefficiency in the work of the personnel is related to poor morale which may be traced to inadequate wages or poor working conditions. Poor surroundings in a given department may be so depressing as to affect efficiency of the people within that department. If wages are below average scale, one often maintains better production per dollar of expenditure by raising the wages rather than lowering them. Work in certain departments is naturally monotonous. For example, it may improve morale greatly and improve efficiency of work by supplying music to workers in the laundry; this has been done in certain institutions with improvement in output of work.

6. Proper Use Of Civil Service. — At times civil service regulations appear to handicap the functions of an organization; however if they are utilized properly, they should be able to improve efficiency. Often it will be necessary to discharge personnel and obtain workers with more ability and more conscientiousness in their work.

7. Obtain Good Management. — It is obvious that the superintendent or administrator of the hospital must be a man of intelligence and foresight. He must be willing to spend time visiting the various departments of the hospital to find out who is working and who is simply passing time. Advice to personnel under him may help to obtain good buying outlets, etc.

8. The Professional Staff Must Be Economical. — Too often, the professional staff pays too little attention to the economics of the hospital. The superintendent and the staff should cooperate in all respects, and endeavor to maintain a minimum rate of hospital expense.

(a) Early Discharge of Patients. — The staff should make it a point to discharge patients as soon as they are able to leave the hospital and not allow them to keep beds for three or four additional days simply because the insurance company is paying for the hospital expense. An early discharge of patients will not decrease the daily cost per day in a hospital but will allow more patients to be taken care of.

(b) Maintain an Effective Check on Drug Orders for the Patient. — Too often, the physician writes an order for a patient to give a certain drug 2 or 3 times per day and forgets to discontinue it until long after indications for the therapy are present. This is a frank waste due to carelessness, and is inexcusable.

(c) Hold the Laboratory Tests to a Minimum. — In hospital A as shown in Table 3, elimination of superfluous tests will reflect advantageously on the finances of the hospital, since the hospital is performing all the usual tests on every patient for a flat fee of $9.25. However, in hospital B elimination of superfluous laboratory tests will not improve the financial situation in the hospital because the patient is being charged for each test. Actually an elimination of the useless tests might contribute to financial loss, since the hospital is presumably making a small profit on each test. However, I am sure that all of you will agree with me when I state emphatically that we must minimize the number of tests requisitioned for each patient so that the total cost of medical care can be reduced.

Often indeed the ambitious house physician orders a large number of laboratory tests to make a good impression on the attending man. This practice must be condemned whenever it is encountered. We must first examine the patient and eliminate certain possibilities in the diagnosis before ordering more than the routine tests. By utilizing intelligence in this way we will be able to dispense with certain tests which on admission of the patient might have appeared necessary or indicated. For example, hasty judgment might lead one to order a G.I. series on a patient when detailed examination including a blood count would reveal the diagnosis of pernicious anemia and make a G.I. series useless, unless there was clinical evidence of a carcinoma in the stomach.

When I make rounds on the wards with my house staff and students, I stop frequently on new patients and ask what is going to be done in the work-up of the patient. I tell the student, interne or resident that I will penalize him just

as much for requesting an unnecessary test, as for failing to request a necessary one; this statement invariably makes him stop abruptly in his thinking, and use effective discrimination in his choice of laboratory aids.

(d) Encourage Economic Habits in the Operating Room. — It is well known that the operating room is a very expensive department in the hospital. Too often the surgeon pays no attention to the cost of a suture or an instrument because he chooses to hide behind the false excuse that expense is of no item when we are dealing with major procedures. The fact remains that you can often do an operation with a certain cheap instrument just as effectively as with a very expensive one. Since sutures are quite expensive, we utilize cotton a great deal in our hospital, and purchase ordinary 5 and 10c store cotton rather than expensive mercerized or long staple cotton thread. There are certain occasions when a more expensive suture including catgut and silk must be used. However, we use cotton almost entirely in closing the fascia of abdominal wounds, and in closing the subcutaneous tissue as well as skin.

IMPORTANT POINTS IN MAINTAINING ECONOMY IN BUILDING A NEW HOSPITAL

Unless experienced consultation is available in drawing up plans for a new hospital, innumerable errors may be made which will prevent economic operation. One of the most common errors made in modern plans is to have large rooms and expensive quarters for service departments. One should always remember that the hospital is designed for the patient. Actually economy and efficiency in the care of the patient are the two factors of primary importance. Often, indeed, rooms are set up for certain personnel or functions, and are used only once or twice per week. This wholesale loss in efficiency and cubic space must be abolished in the planning stage, since it is often impossible to convert such rooms to patient rooms after the hospital is constructed. It is often very helpful for the governing body of the hospital to issue a flat statement that the hospital must be constructed for a given amount of money per bed. This is a very stimulating policy to adopt since it will encourage the proper efficiency in the use of various rooms designed. Waste of space is often encountered in the operating rooms by utilizing two full stories in the operating room, perhaps to make room for a large gallery. During these days when operations are being televised for medical meetings there is less and less need for large space for visitors. However, a small gallery will be strongly indicated in teaching hospitals for at least two or three operating rooms where students, members of the staff, and visitors are given the opportunity to watch the operation. The fact remains, however, that viewing an operation from a gallery allows few people in the gallery to profit much from that observation.

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STOMACH SECRETIONS

A continuous secretion of gastric juice occurs in normal persons when the upper part of the alimentary tract is empty of food and the subject is asleep or shielded from the sight, smell or taste of food. Under these conditions an average of 18 milliequivalents of hydrochloric acid is secreted during a twelve hour period at night. Under the same conditions 135 patients with duodenal ulcers secreted an average of 60 milliequivalents of hydrochloric acid, or almost four times as much as the normal level. The output of hydrochloric acid in patients with duodenal ulcer is reduced to an amount below the normal level by complete vagotomy, thus indicating that the hypersecretion in these patients is neurogenic in origin and also that the continuous secretion in normal man is partly due to a secretory tonus in the vagus nerves. Excerpt: *Archives of Surgery, Vol: 59, Dec. '49, #6, p. 1212, WOODWARD et al.—Effect of Vagotomy In Man.*

Is Marrow Eosinophilia a Valid Yardstick for Splenectomy in Thrombocytopenic Purpura?

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Dr. Schwartz: The nature of this title presumes that there are some who do not agree that marrow eosinophilia is a valid criterium for splenectomy in thrombocytopenic purpura. Dr. Limarzi who is in the audience seems to be one of the hematologists in disagreement. However, if I may state my point of view now, perhaps Dr. Limarzi will state his point of view in the discussion.

About 15 years ago the problem of therapy in thrombocytopenic purpura was fairly simple. Almost all patients were treated by splenectomy. Some improved and some did not, but everybody agreed on the treatment of choice. About 10 years ago, however, we became a little less sure of ourselves. Some patients who were splenectomized did not recover. Others, on the other hand, were cured by splenectomy. However, some of the patients who were not operated also improved, while some died. The problem challenging us was: Could we tell in advance which patients were going to get better without splenectomy and which were not going to get better without splenectomy; and which patients would get well after splenectomy, and which would not. We still do not know the answer to all these problems; but we have made some slight progress.

Before discussing the use of the marrow eosinophil count in thrombocytopenic purpura, it might be well to devote a few minutes to the discussion of the overall problem of thrombocytopenic purpura. Thrombocytopenic purpura is, of course, not a disease, but a description of a syndrome which is divided into two main types. In one type the marrow is replaced by either foreign cells or by fibrous tissue, and patients who show this type of thrombocytopenic purpura are said to have "secondary thrombocytopenia."

Primary thrombocytopenia is said to exist when the platelet count is low in the presence of a marrow which is quantitatively not deficient. Of patients with so-called primary thrombocytopenia, about 15 per cent have low platelet counts secondary to disease in the spleen. The splenic pathology is not specific. In patients with cirrhosis of the liver, with large spleens, thrombocytopenia may exist which can be cured by splenectomy. Similarly, in Gaucher's disease, if the marrow has not been replaced, splenectomy may increase the platelet count. A similar situation exists in tuberculosis of the spleen, amyloidosis of the spleen, Felty's syndrome and many other conditions. These patients are said to have "secondary splenogenic thrombocytopenic purpura." Splenectomy improves the thrombocytopenia but does not affect the underlying disease.

The large remaining group of patients are said to have "primary thrombocytopenic purpura." It is in these patients that the eosinophilic index is particularly valuable. Sometimes patients

with primary thrombocytopenia have their disease as a result of food allergy. As an example, consider the following patient who was admitted to Cook County Hospital with what was thought to be meningitis, but who after investigation turned out to have a subarachnoid hemorrhage secondary to thrombocytopenic purpura. Her marrow was high in eosinophils. She was taken off all medication, placed on an elimination diet which at first was poorly controlled since the patient still got aspirin and phenobarbital. During this period there was very little change. When these drugs were stopped the platelet count rose. When wheat and soy beans were added the platelet count fell again. Careful investigation of her diet eventually proved that she was sensitive to wheat and pork. She has remained off wheat and pork for a number of years and during this time has had no recurrence.

Usually in primary thrombocytopenia the changes that occur in the marrow are qualitative changes in the megakaryocytes. These cells look normal but no platelets are being formed. After splenectomy there are many new platelets. Similar changes occur in patients with allergic purpura before and after the elimination of the allergen. However, it is quite unusual for us to identify the definite allergen in these patients.

In our group with quantitatively normal marrow we have attempted a second classification into idiopathic and hypersensitive groups. In neither group is the spleen palpable. The red blood cells and white blood cells are normal. The megakaryocytes quantitatively are normal but qualitatively appear abnormal. The big difference between these two groups seems to lie in the relative number of eosinophils in the bone marrow. There appears to be no relationship to either sex or color. We have found the hypersensitive type most common in children. When thrombocytopenia occurs in children, most of them improve spontaneously, and the rest improve after splenectomy. When thrombocytopenic purpura occurs before the age of 30, there is usually a high eosinophil count in the marrow. We do not feel that this is merely an age differential but rather a reflection of the fact that the hypersensitive type is more common in the younger age group. However, the condition can occur at any age. In our series, we have found most occurring after the age of 10 and before the age of 30. Out of 100 cases we have found perhaps one-third to be essential thrombocytopenia, and 2 out of 3 cases to be allergic thrombocytopenia. Out of 65 patients whom we have classified as hypersensitive, 29 had spontaneous recovery. Out of the 35 cases we have classified as essential thrombocytopenia, only 8 recovered spontaneously. When splenectomy is done the patients with hypersensitivity almost invariably improve. However, there was a high mortality in the other group. Out of 18 splenectomies in the non-hypersensitive group, 8 were successful, 2 patients were unimproved, and 8 died.

Dr. Louis R. Limarzi, Associate Professor of Medicine: Since Dr. Schwartz first published his observations on sternal marrow eosinophil levels in idiopathic thrombocytopenic purpura, we have been interested in this aspect of the disease. Drs. Presley, Best, and myself have recently completed an analysis of the bone marrow with particular reference to eosinophils and megakaryocytes in 100 cases of idiopathic thrombocytopenic purpura and compared the findings with those in 100 normal subjects. We shall publish the complete report at an early date.

I have asked my co-authors to give some details from our study which relates to this question. To our knowledge, no investigator other than Schwartz has been able to find a striking correlation between marrow eosinophilia and course of the disease.

Dr. Sophie J. Presley, Clinical Instructor in Medicine: Dr. Schwartz has used an eosinophil index of 50 as the dividing line separating patients with idiopathic thrombocytopenic purpura into "high" and "low" index groups. We have calculated our marrow eosinophil percentages in a slightly different manner, but the results are mathematically interchangeable. The actual scatter of individual observations rather than an arbitrary "high-low" division was used in evaluating the relationship of eosinophil counts to the final outcome in each case. All results were analyzed statistically. Marrow eosinophil counts in the non-allergic normal subjects and in the favorable and unfavorable outcome groups of purpura were so distributed as to overlap each other considerably. A few patients with purpura had very high values, but no significant differences were evidente between the mean values of the three groups.

We have also plotted the data on the cases

of purpura so that the percentage of cases having a favorable outcome could be compared with the numerical index of eosinophils in the marrow. A majority of cases showed a favorable outcome at all eosinophil levels, but the prognosis became increasingly more favorable with higher degrees of marrow eosinophilia. Thus, we have confirmed the tendency towards better prognosis with high marrow eosinophilia as first noted by Schwartz, but we have been unimpressed by any particular level of eosinophils as a practical guide to prognosis in individual cases.

It has long been known that younger patients tend to recover spontaneously or to respond well to splenectomy. These younger patients with purpura also tend to have more eosinophils in the marrow than older patients. It is possible that age, rather than eosinophilia itself is important in the apparent relationship between marrow eosinophils and course of the disease.

Dr. William R. Best, Clinical Assistant in Medicine: Some differences between our series and that published by Schwartz when considered on the basis of "high" and "low" eosinophil percentages may at first seem great. Actually they are within the limits of chance inasmuch as a small number of cases is involved in each sub-group. The greatest apparent difference is in figures for mortality following splenectomy, a development subject to many extraneous factors. In the study of Schwartz, 8 of 18 patients with low indices died following splenectomy while in our own series 1 of 21 had a like fate.

We have again noted the trend towards better prognosis with marked marrow eosinophilia, but the numerous individual exceptions make this measure of little significance in evaluating prognosis or deciding on splenectomy.

The lack of significant differences between normal subjects and patients with idiopathic thrombocytopenic purpura in our series would certainly not speak for an allergic etiology in many instances. The one case cited here today by Dr. Schwartz in which food allergy appeared influential is clinically quite interesting. I should like to ask him in how many cases of idiopathic thrombocytopenic purpura can these allergic factors be demonstrated?

Dr. Schwartz: Actually, despite intensive investigation of all such cases, we have found supplementary evidence for allergic etiologies in only a few.

Dr, Limarzi: Neither marrow eosinophilia, degree of immaturity of megakaryocytes, number of megakaryocytes, size or histologic findings of the spleen, stage of the disease, nor post-operative platelet response give any definite clue as to the future course of the disease. We have learned from clinical experience that 60-80% of the cases recover following splenectomy, but prior to splenectomy, we cannot separate those that will from those that will not respond.

Thus, it appears that the greatest value of bone marrow study in idiopathic thrombocytopenic purpura is in the differentiation of this disease from leukemia, aplastic anemia, and other conditions.

I am certain that Dr. Schwartz will not withhold splenectomy from any patient with idiopathic thrombocytopenic purpura merely on the basis of the eosinophil index.

Dr. Schwartz: When the published figures of Presley, Best, Poncher, and Limarzi are analyzed many points of similarity with our own conclusions become apparent. The most important of these are the following: 39 per cent were splenectomized in the "high eosinophil index" (HEI) group against 54 per cent in the "low eosinophil index" (LEI) group; 46 per cent of the HEI recovered spontaneously against 25 per cent of the LEI; the overall mortality was less than two per cent in the HEI against nine per cent in the LEI; and whereas 45 out of 56 (80 per cent) had a favorable outcome in the HEI, only 29 out of 44 (66 per cent) in the LEI turned out well.

Fortunately or unfortunately this simple differential point cannot take the place of either sound clinical judgment or individual evaluation of the patient, both of which factors still remains of utmost importance in both prognosis and therapy.

Venography in Chronic Venous Insufficiency of the Lower Extremities

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Chicago

Roentgen visualization of the veins is assuming an important place in the evaluation of lower extremities disabled by chronic venous insufficiency. The procedure was first described by Berberich and Hirsch in 1923[1], but it was not until recently that its diagnostic possibilities were realized. We are indebted to a host of workers for its present development and use in complicated venous disorders involving the limb[2,3,4,5,6,7].

We have utilized this diagnostic aid in the Vascular Clinics of the Michael Reese Hospital for several years. Generally, we have found venography to be useful in indicated cases to determine incompetency of the superficial and deep venous systems, the presence of hidden varices and incompetent perforating veins, and to determine the presence and location of thrombosed deep veins.

For the most part we have employed 35 percent diodrast as a contrast medium and consider this drug satisfactory in the majority of cases. Recently we have used 30% urokon sodium and have obtained fine films with a minimum of patient reaction. Both drugs, however, have been used with caution, and we have determined sensitivity prior to and during the injection.

It is the purpose of this report to present a brief resume of the techniques which we have found useful in our studies and our results.

METHODS

1. To determine incompetent superficial and communicating veins:

a) Venography is seldom necessary to diagnose incompetent superficial veins, but in a few cases the usual diagnostic methods do not suffice. These are, for the most part, instances in which the overlying skin is considerably thickened, the legs are grossly heavy or edematous, and the subcutaneous tissues indurated. Direct percutaneous injection of the superficial varices[8] may be employed, utilizing diodrast or urokon sodium, to visualize these veins.

b) In some cases hidden varices may extend as large communicating branches lying within the muscular layers of the leg. We have demonstrated these channels by the following method:

The patient is placed on an x-ray table tilted 75 degrees upright. A tourniquet is tightened above the ankle and a suitable vein selected on the dorsum of the foot for the injection. A 14 by 17 inch x-ray film is supported behind the leg. Venous puncture is made and a small test dose of the contrast medium is injected. If there is no sensitivity reaction after a short waiting period, 15 cc of the drug is instilled in approximately ten seconds. Roentgenograms are taken in the AP position. About 5 cc more of the solution is added when the patient has been turned for the lateral view. Multiple tourniquets may be used on the leg to localize more adequately the sources of incompetency. The dye will gravitate to the varicosed branches and remain there for a considerable time if the leg is not moved. Elastic bandages may aid to force the dye into the region of the knee and upper leg.

2. To determine competency of the deep veins:

It is the present belief of Bauer and others that in the course of deep thrombophlebitis the venous valve system becomes damaged. With rechannelization this results in vein incompetency[9]. This may cause a sluggish flow and even possibly retrograde flow in the deep channels[10]. The net result is chronic venous insufficiency. All this may be determined by the method described in 1(b), or by means of "retrograde" injections.

With the former procedure, 1(b), competency

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of the deep system is determined by taking roentgenograms at definite time intervals and noting the rapidity of the disappearance of the dye from the veins. In chronic venous insufficiency clearance of the contrast medium will be slow.

For the most part we have used "retrograde" injections of the contrast medium into the femoral or popliteal veins to decide whether retrograde flow or venous stagnation exist. We have not been able to demonstrate retrograde flow in any case. However in most instances a portion of the dye flowed down into the lower leg, outlining the valves. This probably was due to the weight of the contrast medium, and possibly differences in rate of flow within various laminar sections of the moving blood. We believe that when a great quantity of diodrast gravitates downward, it indicates relative venous stagnation.

The technique for "retrograde" popliteal injection is simple. The patient is placed prone in the 75 degree upright position on the x-ray table. A supporting pillow is positioned on the patients feet, and a 14 by 17 inch x-ray plate propped on top of this next to the leg. Half of the plate is covered by a lead screen for quick shifting in taking a lateral exposure. Under sterile conditions a small wheal is made with 1 percent procaine midway between the condyles of the femur, and at the level of the patella. 5 cc of procaine is then injected deeply. A three inch needle with attached syringe containing contrast medium is then inserted into the popliteal vein. This is done slowly and deliberately. A rapid flow of venous blood will indicate entrance into the vein. A test dose of the diodrast, or urokon sodium, is then injected, and finally 10-15 cc of the drug. The needle is withdrawn and a roentgenogram made, first in the anterior-posterior, and finally in the lateral position.

The results of such injections are shown in Figures 1c and d, 2c, 3.

We have also used a venographic modification of the Trendelenburg test to establish valve incompetency in the deep venous system. In this procedure the patient was positioned on a tilt x-ray table at 75 degrees and a tourniquet placed about the lower thigh. A needle, connected to a length of tubing and a syringe of diodrast, was then inserted into the popliteal vein. The tourniquet was loosened and the head of the table lowered to empty the deep veins. The tourniquet was now tightened, the table again tilted to an upright position and the tourniquet released. The diodrast was injected at the time of release of the tourniquet. With the flow of blood downward into the emptied vein the degree of competency of the valves was established (Figure 2c).

3. To determine patency of the deep veins and evidences of previous deep vein thrombosis:

Chronic venous stasis is frequently due to thrombosis of the deep veins but complete and permanent occlusion of these veins probably occurs in few cases. In such a situation physical examination and clinical tests may not establish the diagnosis, yet it is of particular importance, especially where vein ligation is contemplated, that this question of patency be answered.

This may be done by the method of injection described in (1b) above or with "retrograde" methods. For the most part we have employed the former technique with the exception that the patient is placed horizontally on the table. In this position it has been possible to fill a greater segment of the deep venous system with a smaller amount of dye. In addition, and particularly when elastic bandages are employed to occlude the superficial veins, the deep venous system may be visualized from foot to groin. It is necessary to overlap two 14 by 17 inch x-ray plates in order to expose the leg maximally. 10-15 cc of solution is needed for each view.

Recently, after a few instances in which we were not able to get any dye past the ankle tourniquet, we have employed only a sphymomanometer cuff on the midthigh. With this inflated to a level between venous and arterial pressures it has been possible to fill the entire venous tree of the lower leg with greater certainty.

Evidences of old thrombosis may be demonstrated by these methods. The rechannelized vein wall is irregular and the valve markings are absent.

In all venographic procedures the roentgen exposure that will render good visualization of the venous system is similar to that used for adjacent bony structures.

CASE REPORTS

1. E.A. 34660B, a 64 year white female with edema of both lower legs for 4-5 years and aching pain in areas of induration about her ankles. She had worn

Figure 1a

Figure 1b

Figure 1c (Retouched)

Figure 1d

Figure 2a

Figure 2b

Figure 2c

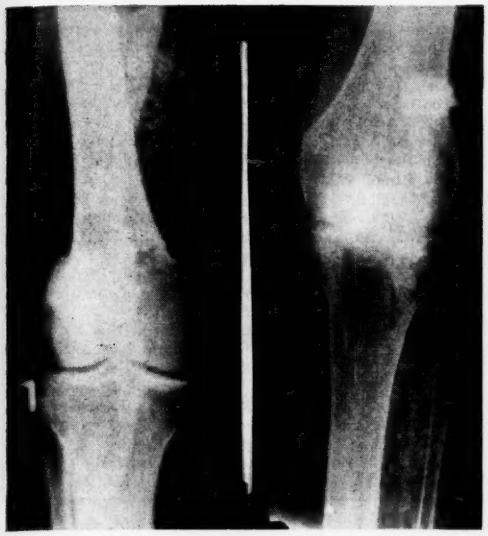

Figure 3a

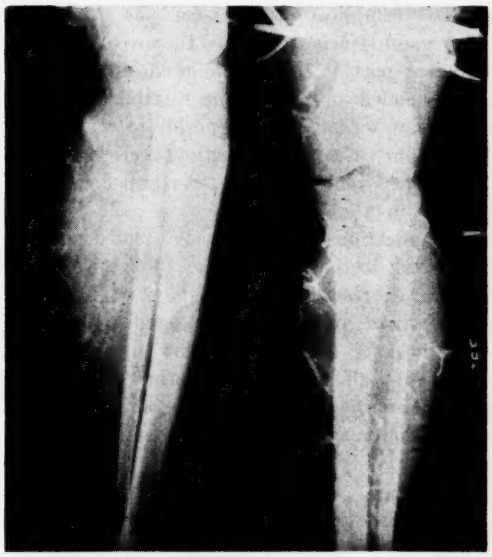

Figure 3b

Figure 4

elastic bandages with some improvement. A few small flare type varices were visible in both legs. The arterial pulsations were considered adequate on palpation. The general impression was chronic venous insufficiency. Venography was performed in the manner described in (1b) (Figures 1, a and b), and also with the "retrograde" popliteal technique. (Figures 1, c and d) It was found that she had extensive varices within the calf muscles. Reflux of only a small amount of dye occurred in the "retrograde" injection. Based on these findings it was quite evident that ligation of the calf communicating veins was necessary. Ordinary superficial vein ligations would be of no avail in such a situation.

2. E.R. 51783B, a 70 year colored male with bilateral stasis dermatitis of lower legs for years and varicose ulcers on the medial aspect of the right leg. Arterial pulsations were present but weak in both feet. There were no visible or palpable varices. On conventional venography (Figures 2, a and b) the deep venous system was not outlined, but the saphenous major vein appeared normal. There were no evident enlarged communicating veins. "Retrograde" venography (Figure 2 c) in the manner of the Trendelenburg test showed a very small popliteal vein and retrograde visualization only to the first distal valve. Below this the vein seemed to be occluded.

3. (a) M.P. E 36494, a 64 year white male with extensive bilateral varicosities for 9 years. He had undergone bilateral extra-luminal vein stripping and associated saphenous vein ligation at the femoral junction. Nevertheless, numerous small varicosities persisted despite injection therapy. Venography was performed as in (1b), and by the "retrograde" popliteal technique (Figure 3a). Incompetence of the communicating venous system was demonstrated. Though "retrograde" venograms showed reflux of dye in more than usual amount, the major share of flow was upward.

3 (b) N.C. 17891, a 55 year white female with stasis dermatitis and edema of the lower legs for many years. She complained of aching pain in both calves. Bilateral intra-luminal vein strippings and associated ligation of the saphenous vein and all branches at the saphenofemoral junction had been performed with partial improvement. A "retrograde" popliteal venogram (Figure 3b) showed considerable reflux of dye, though upward flow occurred as well. The impression of relative chronic deep venous stasis and insufficiency was corroborated.

4. R.B. 92741B, a 43 year white female with a history of "milk leg". A high and low ligation of the saphenous vein had been performed elsewhere one year previously. Subsequently she developed a varicose ulcer. Venograms (urokon sodium), performed with a sphygmanometer cuff about the midthigh elevated to diastolic pressure, showed a lack of filling of the deep veins and a rechannelized lower saphenous. (Figure 4)

DISCUSSION

In general it seems to us that venography has an important place in the diagnosis and evaluation of chronic venous insufficiency of the lower extremities. The decision to use conservative therapy or ligation of superficial and deep muscular varices, the superficial femoral vein, or the popliteal vein may be determined by this means.

In the venographic studies that we have made during the past few years there have been no

serious complications. In a few instances nausea and faintness followed the use of diodrast. In one report [11] barbiturate premedication was recommended to prevent or minimize this reaction but we have not been able to corroborate this in our cases. The reactions were more frequent when venography was performed with the patient in the upright position. There were no complications from the inadvertent deposition of diotrast in the soft tissures. Reports indicate that fewer reactions follow the use of urokon sodium than diodrast in pyelography[12].

It must be pointed out that in performing venography all the desired information may not be obtained by one x-ray study and a number of examinations with different techniques may be necessary.

SUMMARY

The importance of venography in chronic venous insufficiency of the lower extremities has been discussed . This procedure may supply information essential both for accurate diagnosis and logically directed therapy. The techniques which we have found most useful have been described, and their results illustrated.

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Coming —

In the August Issue,
Pictures of the
1952
Annual Meeting

CASE RECORDS OF THE COOK COUNTY HOSPITAL

KARL MEYER, LEO M. ZIMMERMAN, DEPT. EDITORS

A Case of Cardiac Arrest During Surgery with Complete Recovery

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Chicago

The patient was a 52 year male who was admitted to Cook County Hospital on April 17, 1951 complaining of hypertension, intermittent dyspnea, papatation and chest pain of two years' duration. For one month he had a cough with occasional hemoptysis and for two weeks, episodes of profuse sweating and vomiting. He had not worked for two years and was confined to bed part of the time. The past history was essentially negative, except for orthopnea and nocturia for a number of years.

Physical examination revealed a well-developed white male who was dyspneic, orthopneic and somewhat lethargic. The temperature was 99°, pulse 100 and regular, respirations 28 and the blood pressure 228/164. Fundiscopic examination revealed moderate venous nicking with arterial narrowing. The chest was emphysematous without rales or rhonchi. The left apex of the heart was at the left anterior axillary line without detectable thrills or murmurs.

The positive laboratory data were a persistent albuminuria, a non-protein nitrogen of 68 mgm/-100 cc., and enlarged left heart on x-ray and EKG evidence of intraventricular heart block. Following treatment with bed rest, sedation, intravenous glucose, digitalis and mercurial diuretics, the patient impoved but the blood pressure remained over 200 systolic. Following intravenous sodium amytal, the blood pressure dropped from 212/136 to 174/100 and returned to 200/140 after 30 minutes. Benzodioxane failed to cause a significant change in the blood pressure.

The patient was discharged on April 24, 1951 and remained at home until May 5, 1951, when

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he was rehospitalized because of dyspnea, orthopnea and ankle edema. The physical examination was unchanged except for moderate pitting edema of the ankles. The blood pressure was 200/130. Therapy was continued as on the previous admission. Concentration-dilution tests of kidney function showed a variation of urine specific gravity of 1.018 to 1.002. There was 50 percent phenolsulfonphthalein excretion in two hours, and the N.P.N. was 41.

Sympathectomy was advised by the Medical Service. A thoracic sympathectomy was planned and on May 23, 1951 the patient was anesthetized with nitrous oxide, oxygen and ether. Before surgery the blood pressure was 270/140 but after induction, as the patient was turned on his left side, he became cyanotic and there was a sudden drop in blood pressure to 60/50 with a pulse below 60. There was a gradual rise of blood pressure to 200/120 and pulse to 96 soon after the patient was again placed on his back. The operation was cancelled and the patient made an uneventful recovery from this hypotensive episode.

On May 29, 1951 the patient was again anesthetized and a right thoracic sympathectomy was performed through the 5th interspace. The patient was not moved from the supine position, thus an anterior transpleural approach was employed. The thoracic sympathetic chain from T-1 to T-12 was removed together with the greater, lesser and least splanchnics, following which the blood pressure dropped from 255/120 to 156/100. The postoperative course was uneventful. There was a loss of sweating on the right side of the face, arm and trunk.

On June 26, 1951 the patient was again operated upon under ethylene, ether, oxygen anesthesia using a left anterior approach through the 5th interspace. Just after the left thoracic chain was divided above T-2 the blood pressure fell to zero and it was noted that the heart had stopped. Immediate cardiac massage was started and 100 percent oxygen was administered through the intratracheal tube using positive pressure artificial respiration. Neosynephrine (0.1 mgm) and procaine (0.1 gm) were given intravenously. Shortly thereafter 1.0 mgm of atropine sulphate was given intravenously. There were constant twitchings of the auricle but no ventricular contractions. After five minutes 10 cc. of 0.5 percent procaine was introduced into the pericardial sac and 0.1 mgm of neosynephrine was injected into the heart. After an additional 2½ minutes the ventricular beat returned, massage was stopped and the blood pressure returned to 140/90. The operation was resumed a few minutes later and the thoracic chain from T-1 to T-12 together with the greater, lesser and least splanchnics were removed. Postoperatively the blood pressure varied between 120/80 and 150/90. A left basal pneumonia developed which responded to antibiotics. No cerebral damage or other sequellae could be recognized postoperatively. The patient was discharged to the cardiac clinic on the 23rd postoperative day. Six months following surgery the blood pressure varied between 150/100 and 180/110.

DISCUSSION

Sudden cardiac stoppage during surgery usually is due to either cardiac asystole or ventricular fibrillation. Ventricular fibrillation may be caused by such anesthetic agents as chloroform or cyclopropane, the latter agent particularly in the presence of adrenaline or digitalis.[1] Sudden coronary occlusion may cause ventricular fibrillation either during surgery or at other times.[2]

Cardiac asystole is the most common type. It may occur without underlying disease. Recent evidence indicates that carbon dioxide retention may be an important etiological factor.[3] Other factors are unreplaced blood loss, increased vagal stimulation and hypoxia. Cardiac trauma or compression by retractors may also initiate a standstill. Hypopotassemia may be an important etiologic factor.[4] In this case, cardiac asystole occurred just as the sympathetic chain was divided. The sudden interruption of sympathetic accelerator impulses may have caused cardiac arrest due to the relatively unopposed vagal inhibitory effect.

Successful treatment of either type of cardiac stoppage depends upon immediate recognition and early institution of the proper therapy. This consists of three steps which are started simultaneously. The first is restoration of the circulation by cardiac massage. The massage is best carried out through the left chest and continued until forceful independent cardiac contractions are restored. A rate of 80 compressions a minute is considered satisfactory. The second step is maintenance of adequate flow of oxygen into the

lungs and the removal of carbon dioxide. This is best accomplished through an endotracheal tube using a closed system with a soda lime absorber. The third step is the use of drugs. Atropine is given to minimize vagal cardiac inhibition. Procaine or procaine amide (pronestyl) may be given intravenously or into the heart for desensitization. Following this some stimulating agent such as adrenaline or more recently calcium chloride[5] may be used. Ventricular fibrillation, if present, is best corrected by defibrillation using an electrical current. This procedure was described by Beck in 1947[6]. The fibrillation is converted to a standstill and then treated as described.

SUMMARY

A case is summarized in which cardiac arrest occurred during a thoracic sympathectomy. The patient made an uneventful recovery. The principles of treatment of cardiac arrest are presented.

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ARMY MEDICAL SERVICE TO TEST NEW ANTIMALARIAL DRUG AMONG 1,000 KOREAN RETURNEES

Army medical research teams began protracted followup tests March 15 on the new antimalarial drug, primaquine, among 1,000 Korean returnees at four installations in this country, the Department of the Army announced today. The observations, to be made on volunteer subjects who were exposed to malaria in Korea but have no history of the disease, are designed to furnish conclusive proof of primaquine's ability to prevent attacks of clinical malaria.

The tests are being conducted under the supervision of Army Medical Research and Development Board chairman, Colonel John R. Wood, M.C., at Fort Dix, N. J.; Fort Knox, Ky.; Fort Benning, Ga., and Camp Breckenridge, Ky.

Together with chloroquine, the malaria suppressant, primaquine has been routinely administered to troops returning from Korea by water since December 1951. Men selected for the new follow-up tests returned to this country before that time and, therefore, did not receive primaquine.

During the follow-up tests the returnees will receive the standard 15-milligram-a-day dose of primaquine for 14 days. Thereafter they will be retained at their posts for close clinical observation by Army medical officers until Oct. 1, 1952. Special interest will be focused on the summer months, the critical period for malaria relapses among those previously exposed to the disease. It is hoped that the use of primaquine will prevent these break-throughs.

The 1,000 participants will be evenly divided among the four testing centers.

Dr Ralph Jones, Jr., assistant professor of research medicine at the University Hospital of the University of Pennsylvania and civilian consultant to the Army Medical Research and Development Board, supervises the tests at Fort Dix, Camp Breckenridge and Fort Knox. He will visit each of these camps periodically to assure the uniformity of tests measures.

Dr. G. Robert Coatney of the U. S. Public Health Service, also serving as consultant to the Board, is in charge of the studies at Fort Benning.

Primaquine was first synthesized in 1945 by Dr. Robert Elderfield of Columbia University and later tested under the auspices of the Public Health Service at Christ Hospital, Cincinnati. Human toxicity studies and clinical investigations have been in progress among prisoner volunteers in Stateville Prison, Joliet, Ill., by Dr. Alf S. Alving of the University of Chicago since 1948.

CASE REPORTS

Typhus Fever

Herman N. Kamin, M.D., Herbert S. Lakin, M.D., Gerschen L. Schaefer, M.D. and Milton Goldin, M.S.
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Within recent years the medical profession has been alerted to the possibility of rickettsial infections especially typhus fever. This has been done for several reasons:

1. Presence of our armed service men in areas where the disease occurs;
2. Increased scope and speed of travel as a result of airplanes;
3. Post war influx of displaced persons from Europe, many of whom may have been victims of the disease;
4. Laboratory diagnostic methods no longer limited to the Weil-Felix test;
5. The Brill form of the the disease may be important in initiating new epidemics of louse born typhus.

We have encountered and studied such a case recently and therefore consider it of sufficient interest to report it.

From the Department of Medicine, Mount Sinai Hospital, and the Chicago Medical School, Chicago, Illinois.

In 1896 Brill described an atypical typhoid-like disease with a negative Widal test. In 1898 he reported 17 cases and in 1910, 255 cases. All of these were in the immigrant populations of the northeastern coastal cities of the United States. In 1934 Zinsser[1] reported a series of 538 cases. Ninety four per cent of these patients were born in eastern and southeastern Europe where typhus occurred in epidemic form.

Brill's disease is actually a recrudescence of an old typhus originally acquired in Europe, the infection remaining latent for many years. The Weil-Felix agglutination reaction is frequently negative[2,3,4] and confirmation of the diagnosis can be made only by the complement fixation or rickettsial agglutination tests. Usually there is a rise in titer for both epidemic and endemic typhus. Plotz[5] however, found higher titers for epidemic typhus. In reporting 14 cases, Murray et al[2] used the following criteria for diagnosis:

1. Fever of unknown origin.

2. Foreign born persons who have lived in areas of epidemic typhus.
3. Intense persistent headache.
4. Macular or maculopapular rash on 4-6th day of disease.
5. Positive complement fixation or rickettsial agglutination tests.

Since 1917, fifty two cases of typhus fever have been reported to the Department of Public Health of the State of Illinois, only 12 of these in the past 15 years. How many if any of these were Brill's disease, we were unable to determine. Franzblau and Javid[6] reported a case in 1948 without a history of flea, louse tick or mite bite. Aureomycin has proved efficacious in the therapy of typhus fever and Brill's disease[3,4,7].

A 59 year old white male tailor entered Mount Sinai Hospital on January 31, 1951, with a ten day history of several episodes of chills and fever, nausea, anorexia, three episodes of vomiting, and shooting pains from both lower abdominal quadrants into the flanks. The patient had a transurethral resection performed by one of us (H.S.L.) one month previously for urinary retention due to a benign prostatic hypertrophy. There were no urinary symptoms since the operation. The patient emigrated from Russia in 1907 and has not been outside of the Chicago area in over 25 years. There was no history of a febrile episode or a serious illness prior to his present condition or a known illness in Russia.

Physical examination revealed a well developed, fairly nourished, white male in a semi-stuperous condition, with deep and rapid respirations. The temperature was 103° F. rectally. The blood pressure was 90/60. The pulse was full and regular with a rate of 110. There was a generalized maculo-papular pink rash over the body that faded on pressure. The tongue was coated with a dry brownish-black crust and the buccal mucosa was dry. The chest was clear to auscultation and percussion. The heart did not appear to be enlarged, the tones were distant, the rhythm was regular and no murmurs were heard. Examination of the abdomen revealed generalized abdominal tenderness, more marked in both upper quadrants, but no rebound tenderness. The reflexes were hyperactive and equal bilaterally. There were no abnormal abdominal reflexes.

The significant laboratory findings on admission were as follows: The red blood cells numbered 3,610,000 per cu. mm., white blood cells 9,900 per cu. mm. with a differential count of 27 per cent stab cells, 60 per cent segmented cells, 11 per cent small lymphocytes and 2 per cent monocytes. The hemoglobin was 11.1 gm. per 100cc. (71.2 per cent) giving a color index of .99. The platelet count was 150,000 per cu. mm. and the prothrombin time was 23 sec. (38 per cent of normal). The serum cholesterol was 98 mg. per 100 cc. with cholesterol esters 62 mg. per 100 cc., urea nitrogen 39.6 mg. per 100 cc. The van den Bergh test was 0.29 mg. direct and 0.58 mgm. total. Blood culture was negative. Urine culture was positive for *Pseudomonas aeruginosa*. The agglutination test for Proteus OX19 was reported positive at a dilution of 1:800. The agglutination tests for typhoid, paratyphoid, undulant fever, infectious mononucleosis, Proteus OXK and Proteus OX2 were negative. Complement fixation tests performed by the laboratory of the State of Illinois Department of Health were reported positive 1:160 Plus for both epidemic and endemic typhus.

On the second hospital day numerous petechiae were noticed on the patient's chest and abdomen. Spinal fluid examination at this time revealed normal pressure, protein 121 mg. per 100 cc., sugar 78 mg. per 100 cc., no cells, negative culture, negative tests for syphilis and normal colloidal gold curve.

At about this time the patient also developed an auricular flutter which was confirmed by electrocardiographic studies. A normal sinus rhythm was re-established after three days without any cardiac medication.

On admission the patient was placed on aureomycin therapy 100 mg. intravenously every six hours. He became afebrile on the fifth hospital day after having received 1.4 gm. of the antibiotic. The medication was then continued orally at the rate of two grams per day until patient went home.

On the sixth hospital day the following laboratory studies were reported, cephalin floculation 4 plus, thymol turbidity 4.5 units, the van den Bergh test was .08 mg. direct and 0.28 mg. total. The serum albumin was 3.7 gm. serum globulin 2 gm. with an albumin-globulin ratio of 1.8. The patient continued to improve and was able to go home on the eleventh hospital day. Upon discharge the agglutination test for Proteus

OX19 was positive 1:640. The complement fixation tests for endemic and epidemic typhus were reported as positive 1:80. The cephalin flocculation test was 4 plus and thymol turbidity 5.1 units.

SUMMARY

We have reported a case of Brill's disease in Illinois. We would like to stress, as others have in the past, that a negative Weil-Felix reaction should not exclude the diagnosis, although this case had a marked positive reaction. With the influx of many foreign born displaced persons and with the return of members of the Armed forces from areas where typhus is epidemic, it behooves us to be on the alert for Brill's disease. Not only active cases but those harboring a latent disease may act as human reservoirs for further spread of typhus.

We are indebted to Dr. Israel Davidsohn, Director of Pathology, Mount Sinai Hospital and Professor of Pathology, Chicago Medical School for valuable suggestions and assistance in the preparation of this report.

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Carcinoma of the Thyroid in Children

Richard H. Lawler, M.D.*, James W. West, M.D.* and Edmund G. Lawler, M.D.**
Chicago

Carcinoma of the thyroid gland in children is uncommon. It has been estimated by Kennedy[1] that one percent of thyroid cancers are found in children. In a series of 289 cases of carcinoma of the thyroid reported by Crile[2], the youngest patient was 18 years of age. This paper reports two cases of papillary and solid carcinoma of the thyroid which occurred in children of four and one-half years and seven and one-half years of age.

The histological classification presented by Duffy and Fitsgerald[3], and used at Memorial Hospital, is employed to described the four types of carcinoma of the thyroid.

The papillary carcinoma comprises about half the malignant tumors of the thyroid. Histologically, they are characterized by stalks of connective tissue covered with cells resembling thyroid epithelium. Acini with or without colloid may make up a large part of the tumor. In some predominantly papillary tumors may exist components of the other types of carcinoma, that is, alveolar, follicular or solid types. (Figure 1).

Alveolar and follicular carcinoma is characterized microscopically by the presence of glandular spaces without colloid (alveolar type) and the presence of follicles with colloid (follicular component).

Solid carcinoma is characterized microscopically by cords, groups or nests of cells growing without evidence of follicles, papillae or alveolar formation. The cells are relatively uniform in size and shape with regard to the nucleus. These solid types, as with the other types of tumors, may show a mixture of tumor tissue having in

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different places components of papillary or follicular and alveolar types of tissue. (Figure 2)

The fourth type of tumor described is a rare carcinoma, well encapsulated with no lymph node involvement. Microscopically this tumor consists of spindle cells, giant cells and "Hürthle-cells".

The cases presented in this paper are both a papillary and a solid carcinoma. Papillary carcinomas are slow growing and are of the lowest grade malignancy. Metastatic lateral cervical metastases rarely become invasive, nor do they involve the great vessels of the neck, as a rule. These metastases are true tumor emboli which lodge in the cervical lymph nodes. After the primary tumor is removed no new metastatic tumors develop.[4] The isolated nodules or groups of metastatic foci can be removed with a good prognosis if any of the nodules are found after the primary tumor has been removed. These nodules tend to grow very slowly over a five to ten year period. Thus, we believe that the best treatment for papillary carcinoma of the thyroid would seem to be, in the light of common experience, the removal of the primary tumor and excision of any nodules detected during or after extirpation of the primary tumor. The radical and mutilating neck dissections seem hardly to be justified in this type of malignancy due to the good prognosis offered by the more conservative method of treatment.

If, however, the complete removal of the tumor and its metastases is not possible due to invasion of vital structures radon seeds may be implanted in questionable areas. Roentgen therapy is of little value, as papillary tumors are highly radio-resistant.

Radio active iodine is not usually employed because the tumor and the metastasis can be eradicated surgically.

Case No. 142571, male, age 4½ years. Patient entered hospital having a noticeable "lump in the neck" for 1 year; otherwise the child had been essentially well. Physical examination revealed a 3 x 5 cm. mass in the anterior neck at the level of the thyroid gland. This mass was apparently fixed to the trachea. A hemi-thyroi-

Figure 1. Papillary adenocarcinoma of the thyroid.

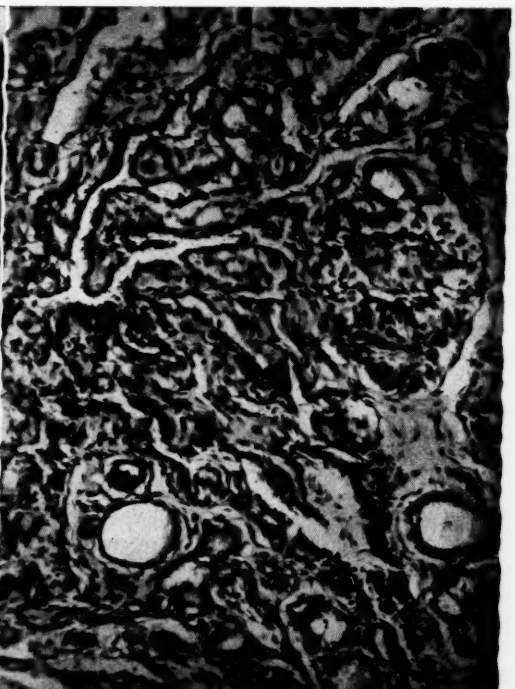

Figure 2. Follicular alveolar and solid carcinoma of the thyroid.

dectomy was performed removing the mass and immediately adjacent tissue. Pathologic diagnosis revealed papillary carcinoma of the thyroid. No further surgery was done in this case as it is felt by the authors that conservative methods of treatment in papillary carcinoma are more desirable than radical dissections.[5] There were no glands found in the neck.

Case No. 134782, female, age 7½ years. Patient entered hospital 12/50 for biopsy of gland of neck. Biopsy revealed carcinoma of the thyroid. Physical examination revealed a child in apparently good health. There was no palpable thyroid tumor. A hemi-thyroidectomy was performed, the right lobe being entirely removed. Pathologic findings revealed a carcinoma of the follicular, alveolar, solid and papillary types. A subsequent bilateral radical neck dissection was performed which disclosed still more involved lymph nodes. The radical neck dissection was done because of the presence of solid type carcinoma of the thyroid. At present the patient is apparently well.

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TRANSFUSIONS IN ERYTHROBLASTOSIS FETALIS

A study of 205 babies with erythroblastosis fetalis indicates beyond reasonable statistical doubt that exchange transfusion of blood from female donors results in a lower mortality than that from male donors. Of 137 babies receiving blood from male donors only, 27 died, a mortality of 19.7 per cent. Of 42 babies receiving blood from female donors only, none died.

The beneficial effect of a large amount of blood from female donors in babies with erythroblastosis fetalis is statistically very striking. In addition to the series of 179 cases in which no attention was paid at the time to the sex of the donor, 13 additional babies with erythroblastosis fetalis were deliberately treated with exchange transfusion using blood from female donors, with no deaths.

The quantitative aspect is briefly discussed. The beneficial component of such blood is not known, but isolated plasma fractions are being investigated. It appears that, for the present, exchange transfusion, using blood from a female donor, is the treatment of choice in babies with erythroblastosis fetalis. Excerpt: *The New England Journal of Medicine Vol: 241 Nov. 24, '49 #21 p. 806 ERYTHROBLASTOSIS FETALIS V. The Value of Blood from Female Donors for Exchange Transfusions* Drs. Allen, Diamond, and Watrous.*

PATHOLOGY CONFERENCES

EDWIN F. HIRSCH, DEPARTMENT EDITOR

Clinicopathologic Conference
Wesley Memorial Hospital
December 12, 1951
Edited By Chandler Smith, M. D.

CASE 61309

The patient was a white female 47 years old who entered Wesley Memorial Hospital with complaints of swelling of the abdomen and vaginal bleeding.

PRESENT ILLNESS: She had been well until 2 years before entering the hospital when a sensation of fullness of the abdomen was noted. Soon after this there was a gradual increase in waist-size. These changes were slowly progressive so that difficulty in the fitting of clothes developed. There were no other complaints until one month before hospital admission when a sharp and constant pain developed in the left lower abdomen that radiated to the left upper quadrant. The pain was of 2 days duration and subsided after an enema. The fecal return appeared normal and at this time the patient first noted a vaginal discharge that contained bright red blood and clots. Slight vaginal bleeding persisted. There had been no constipation although there was a sensation of incomplete defecation during the 3 weeks before admission. There had been no nausea, vomiting, anorexia, loss of weight, melena or other symptoms referable to the genitourinary tract.

PAST HISTORY: A supracervical hysterectomy had been performed 7 years before the present illness because of excessive menstrual bleeding. Moderate hypertension had been present for the past 4 years and exertion was occasionally accompanied by weakness and palpitation. Hyperthyroidism had been present for the past 3 years and the patient was taking 10 drops of Lugol's solution and 1½ grs. phenobarbital three times daily at the time of admission.

PHYSICAL EXAMINATION: The patient was a small under-developed and poorly nourished white female who did not appear acutely ill. The temperature was 99.0 degrees (F.), pulse 92, respirations 22, and blood pressure 168/96 mm. Hg. There was no exophthalmos and the head was normal. The thyroid was firm, smooth, symmetrical and barely palpable. The chest was clear to percussion and auscultation of the heart and lungs were normal. The abdomen was moderately destended and nontender. A firm mass was present in the left abdomen that extended from the costal margin to the left iliac crest. The inferior border of this mass was smooth, firm and tender. The

upper border of the mass was separate from the spleen. The mass did not move with respirations. The liver margin extended to the right iliac chest. Rectal and pelvic examinations revealed only absence of the body of the uterus, and a small cervical erosion. The extremities were normal. There was no enlargement of peripheral lymph nodes and neurologic examination was normal.

LABORATORY EXAMINATION: Urinalysis was normal except for a trace of protein. Hematologic examination revealed 14 grams of hemoglobin per 100 cc. There were 4,600,000 erythrocytes and 10,700 leukocytes per cu. mm. Differential count of 100 cells disclosed 68 segmented granulocytes, 6 band cells, 23 lymphocytes, 2 eosinophils and 1 monocyte. The platelet count was 372,000 per cu. mm. and the prothrombin time was 98 per cent. The sternal marrow was normal. After an intramuscular injection of adrenalin there was no change in the blood leukocyte count or in the size of the abdominal mass. Total plasma protein was 5.8 gm. per 100 cc. with 3.0 gm. of albumin and 2.8 gm. of globulin. Thymol turbidity was less than 1 unit. X-ray examination of the chest revealed only slight increase in the transverse diameter of the heart. X-rays of the abdomen disclosed a large mass on the left side, that displaced the stomach medially and the splenic flexure of the colon and the left kidney downward. In addition, the liver margin extended to the right iliac crest.

HOSPITAL COURSE: On the eleventh hospital day an operation was performed.

CLINICAL DISCUSSION

DR. S. J. FOGELSON:* This patient came to the hospital with unusual symptoms. The essential findings include gradual enlargement of the abdomen and a palpable mass of the left upper quadrant associated with vaginal bleeding. There is also an enlarged liver. From the roentgenologic evidence it would seem that something is pushing the transverse colon and left kidney downward. Some characteristics of this case are suggestive of cirrhosis, however, the left upper quadrant mass with displacement of the colon and kidney makes this diagnosis unlikely. In addition, diffuse liver changes seldom account for such pronounced enlargement in advanced cirrhosis. Several characteristics are not clear and it would be most helpful to have a report of a proctoscopic examination and an x-ray examination of this genito-urinary system. In addition, the history suggestive of thyrotoxicosis, indicates that a determination of basal metabolic rate is in order.

The left upper quadrant mass is large and it is apparently not the spleen. The size and location of the lesion are suggestive of a mass in or near the kidney area. Tumors of the left adrenal and cysts of the tail of the pancreas may also be in this location. Tumors or cysts of these organs are ordinarily not associated with vaginal bleeding. However, it may be that this is not related to the abdominal mass and is due to a separate lesion such as an endometrial or endocervical polyp. Perhaps the x-rays will give further evidence as to the cause of this condition.

DR. J. PATRICK RILEY: There is only a plain film of the abdomen. It is apparent that the left upper quadrant is occupied by a fairly large mass which when examined closely extends down approximately to the iliac crest and reveals a peculiar distribution of linear calcification which we presume is within the mass. On excretory urograms, the right kidney and pelvis are normal in apearance. The left kidney is displaced to the iliac crest and the pelvis contains some dye. The left kidney can be pretty well made out and we conclude that this large mass is not the kidney itself. When the patient is put in the prone position this mass pushed actually as far as the midline of the abdomen. When the patient is lying on her back the displacement is towards the midline and you can see the stomach is displaced. Roentgengraphically we can never outline the border of the spleen itself. We conclude from the x-ray it is a normal sized spleen or that there is a tremendous enlargement of the spleen. When the colon is filled with barium, the mass lies as though in a hammock along the upper surface of the transverse colon. The heart incidentally is moderately enlarged.

DR. FOGELSON: Is the stomach pushed forward by this mass? Is it behind the stomach at all

DR. RILEY: In these two positioins it is shown that the mass is posterior to the stomach. The ligament of Trietz is over and past the midline.

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*Attending physician, Wesley Memorial Hospital.

DR. FOGELSON: What kind of duodenal arch is there?

DR. RILEY: The ligament of Trietz is displaced and the arch is not spread but pushed over.

DR. R. J. LANGENBACH: Is the mass moveable at all?

DR. RILEY: No.

DR. A. E. MAHLE: I would like to know if the mass was firm.

DR. THOMAS C. LAIPPLY: The mass was firm and moveable clinically.

DR. LAIPPLY: Are there any questions?

DR. DANFORD CHAMBERLAIN: Were any retrograde pyelograms done?

DR. RILEY: No.

STUDENT: How was it determined that this mass was not the spleen?

DR. LAIPPLY: Evidently they thought they could feel the spleen separately from this tumor or mass.

DR. T. HOWARD CLARKE: I believe the adrenal and the tail of the pancreas are probably the two most important areas to consider as the source of this lesion. In spite of the statement that this could be separated from the spleen the clinicians were apparently not sure of this and they hoped by the adrenal test to detect a change in the peripheral blood which would indicate a splenic lesion. The test was negative and I think that it is not the spleen. I think it is very unusual for the spleen to push the kidney up and I believe that there are two things you should consider. The spleen and the ligament of Trietz are markedly displaced. I would say that the adrenal is a little more likely to do it rather than the tail of the pancreas. Adrenals give very large and very bizarre tumors. Dr. Laipply will ask me which one I am thinking of and I am at a loss to give the exact diagnosis on an adrenal tumor. There is a definite large cystic area. I think it is a retro-peritoneal tumor in the connective tissue or in the adrenal or pancreas. I don't think a pancreatic tumor would be so likely to push the kidney down but perhaps it would. This is most likely a supra-renal lesion.

STUDENT: Would you account for the large liver by metastases?

DR. CLARKE: The liver is probably displaced. She is a rather small woman and she might just have a great right lobe of the liver. Enlargement of liver is the hardest thing in the world for me to determine whether it is clinically enlarged or whether it is one that occupied the right side of the belly.

DR. MAHLE: It is possible to have such a large tumor in left upper quadrant with displacement of the ligament of Trietz, stomach, and the transverse colon. Isn't it possible that it could also move the liver over and down?

DR. CLARKE: I think it is likely that the liver is rotated to the right side of the belly and being thrown together it appears to be relatively larger than it actually is. I see no other explanation for the enlarged liver.

DR. LAIPPLY: Do you think it is a benign tumor?

DR. CLARKE: I don't think it is necessarily a benign tumor. I think it is a tumor in the broad sense of the word.

STUDENT: Could you possibly rule out a cyst of the pancreas with fibrosis? There is calcification in that area shown on the film.

DR. FOGELSON: I should say that was my assumption in my first diagnosis. Pancreatic cyst is number one. I don't know why any one should have vaginal bleeding with a benign pancreatic cyst. That doesn't fit in at all. One should always try to have a single diagnosis. That is what worries me and I seem to be the only one. Dr. Riley, how sure are you that there is calcium?

DR. RILEY: The film was taken before the stomach x-rays were done or before the patient took barium. The calcium was still present and hadn't changed in characteristics at all. I don't know whether she had some peculiar injections in the muscles of the back. Discounting this it is indicated strongly that she had calcium.

DR. MAHLE: Does calcium tell you anything?

DR. RILEY: Frequently calcium which is distributed in the form of large specks lined up to form linear streaks denotes malignancy. It is not an infallible rule and could be misleading.

DR. MAHLE: Could ecchinococcus cyst cause that calcium?

DR. RILEY: There could be calcium lying in the wall. It is my opinion that we did not have enough good x-rays to rule out the possibility of a tumor or cyst of the upper pole of the kidney inasmuch as there might possibly be a double kidney. It seems to me we should have a retrograde pyelogram on the left side to rule out

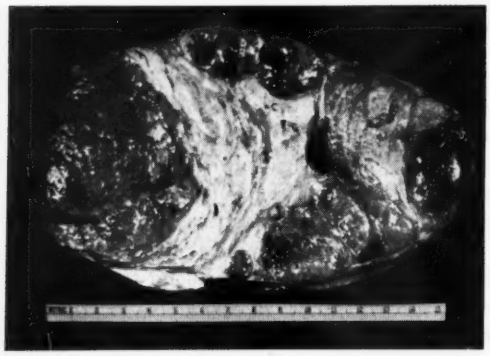

Figure 1. Cut surface of the large adrenal cortical adenoma.

some adrenal tumor or tuberculoma of the adrenal. Also a lateral view of the kidney would rule out the possibility of a retroperitoneal lesion or splenic involvement. Retroperitoneal lesions are very difficult to diagnoses. They can have their origin in any one of the structure of the retroperitoneal tissue.

DR. RILEY: What is the significance of displacement of the ligament of Trietz? Also, can it be used as a reliable sign that the lesion is retroperitoneal?

DR. LAIPPLY: Any authorities on that?

DR. CLARKE: The usual cause of such displacement is a retroperitoneal tumor. Dr. Mahle's question about echinococcus cyst is a very good one and I have seen two in which the surgeon thought he was draining a pancreatic lesion. I have never seen an ovarian lesion which has displaced a kidney down with the stomach over it. You say you would like to see this or something else, but I think you have to work with what you are given and I think it would be unusual for a cyst in upper pole of the kidney to push the kidney down without giving something in the flank also. I think it is retroperitoneal.

CLINICAL DIAGNOSIS

Retroperitoneal tumor.

DR. FOGELSON'S DIAGNOSIS

Retroperitoneal tumor, probably a cyst of the tail of the pancreas.

ANATOMIC DIAGNOSIS

Cortical adenoma of the left adrenal.

PATHOLOGICAL DIAGNOSIS

DR. LAIPPLY: At operation the mass was retroperitoneal and in the region of the left adrenal. It was vascular and was removed with some difficulty. The spleen was adherent to a portion of the mass and it was also removed. Calculi were palpated in the gallbladder so a cholecystectomy was also performed. The patient withstood the operation well and is well at this time, seven months later.

The surgical specimen received consisted of a tumor weighing 1578 grams. It was encapsulated and the external surface was dark red with many prominent blood vessels. It was relatively firm and on section showed dark red and reddish-yellow cut surfaces. (Figure 1) Sections showed it to consist of large cells with eosinophilic or clear cytoplasm like those seen in adrenal cortex. (Figure 2) Special stains did not show the granules which have been described in functioning adrenal cortical tumors and this tumor was not a functional one. The liver was thought to be grossly normal at operation. The uterine cervix as was described in the protocol showed small cervical erosions and it is possible that the hyperemia caused by the large mass in the left abdomen contributed to the cervical bleeding.

Large adenomas of the adrenal cortex are rare. Smaller tumors are less uncommon. In a series of 200 consecutive autopsies 17 cases showed free clusters of adrenal cortical cells outside of the adrenal capsule and 31 for the 200 showed adrenal cortical nodules. Four percent of this series showed definite adrenal cortical adenomas. None of the large adrenal cortical adenomas were encountered. Of one series of 105 adrenal tumors 72 were derived from the adrenal cortex

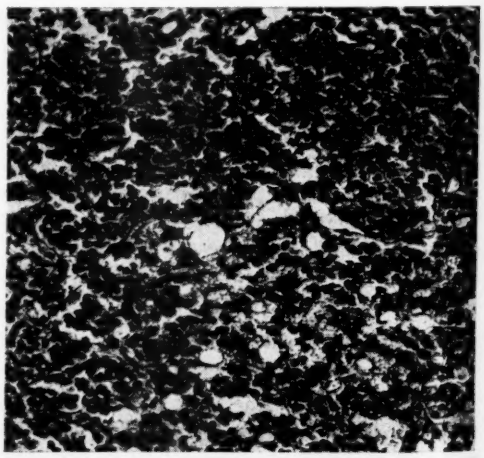

Figure 1. Microscopic appearance of the large adrenal cortical adenoma.

and 33 from the adrenal medulla.[1] Sixty-six of the cortical tumors were adenomas and 6 were carcinomas. Any of these adrenal cortical tumors may be associated with functional disturbances and there is no reliable morphologic distinction between the functional tumors and those which are non-functional although some observers have noted fuchsinophilic granules in the cells of functional tumors. The functioning tumors are less common than the non-functioning ones. In childhood the functioning tumors cause precocious sexual and physical development while in female adults they produce masculinization. The tumor in this case under discussion failed to show signs of endocrine function clinically or anatomically.

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MOVEMENTS AND SECRETIONS OF THE STOMACH

The stomach empties in 3 to 4½ hours after an ordinary meal. In 1931, Thomas pointed out that gastric evacuation occurs whenever the intragastric pressure (due to peristalsis and increased gastric tone) in the region of the pylorus exceeds the resistance of the sphincter. He stated that this mechanism must be regulated in order to prevent emptying of the stomach regardless of the state of digestion of food and the ability of the intestine to handle it. The regulation is due to stimulation within the stomach and within the duodenum. The former stimuli include the consistency and state of chemical digestion of the food; the latter include acidity, products of digestion, and osmotic factors. The substances in the duodenum affect the activity of the stomach by way of the enterogastric reflex. By removal of the pylorus and noting gastric evacuation afterward, Thomas and his co-workers showed, also, that the pylorus is much less important in controlling the evacuation of the stomach than in preventing regurgitation of duodenal contents. Extensive studies of the various products of digestion which, when present in the duodenum, inhibited gastric peristalsis, have been carried out. Brody and Quigley continued the studies on pressure gradient, and it is now believed that the pressure gradient between the pyloric antrum and the duodenum, created by the contractions and tone of the stomach, is the dominant factor in evacuation. This is aided and regulated by the variety of factors which were elucidated by Thomas. Enterogastrone is produced principally by the action of fats on the intestinal mucosa and constitutes a hormone which inhibits both motility and secretion in the stomach. Emotional states inhibit motility and delay emptying. Excerpt: *Journal of the American Medical Women's Association "Physiology of the Alimentary Tract" — Esther M. Greisheimer, M.D. Vol. 7: p. 129 — April, 1952. IV.*

NEWS OF THE STATE

COOK

Ludvig Hektoen Lecture.—The twenty-eighth Ludvig Hektoen Lecture of the Frank Billings Foundation of the Institute of Medicine was presented May 23 by Harold E. Himwich, Director of Research Division, Galesburg State Research Hospital, Galesburg, Illinois. The subject was "The Functional Organization of the Brain, an Experimental Analysis".

Annual Clinic Day.—On May 12, the University of Illinois College of Medicine sponsored its second annual Clinic Day for Alumni. The morning session was devoted to Recent Developments in the Basic Sciences, with Dr. Michael H. Streicher acting as moderator. The following program was presented: Dr. Welton I. Taylor and Dr. Milan V. Novak, "The Use of Antibiotic Agents in the Prophylaxis of Experimental Gas Gangrene and Tetanus."; Dr. Theodore R. Sherrod, "Drugs and Kidney Function."; Dr. Alfred A. Schiller, "Clinical Significance of Capillary Permeability."; Dr. Cecil A. Krakower, "Experimental Glomerulonephritis."; Dr. Olaf Bergeim and Dr. Clarence A. Johnson, "Studies on Iron Absorption."; Dr. Arthur Kirschbaum, "Experimental Leukemia."

The morning was also given over to the following operative clinics: Dr. Warren H. Cole and Staff, general surgery; Dr. Francis L. Lederer and Staff, otolaryngology surgery; Dr. Frederick H. Falls and Staff, gynecologic surgery; Dr. Fremont A. Chandler and Staff, orthopaedic surgery; Dr. Joseph H. Kiefer and Staff, urologic surgery.

Recent Developments in Clinical Sciences was the theme of the afternoon session, with the following program: Dr. Cornelius W. Vermeulen, "Experimental Studies on Dissulution of Urinary Calculi."; Dr. Joseph S. Haas, "Studies on the Mechanism and Treatment of Acute Congestive Glaucoma."; Dr. Frederick H. Falls, "A Comparative Study of the Results in 500 Cesarean Sections Done Alternately by the Low Cervical or by the Classical Technique."; Dr. Roger A. Harvey, "Significant Recent Developments in Diagnostic X-ray."; Dr. S. Howard Armstrong, "Long Time Studies on ACTH and Cortisone Administration."

Joint Meeting on Nutrition.—A joint meeting of the Chicago Medical Society and the Chicago Nutrition Association April 23 was devoted to the theme, "Obesity as a Nutrition Problem". The speakers were: Jean Mayer and Frederick J. Stare, Department of Nutrition, Harvard University, School of Public Health, Boston, "Experimental Obesity and Diets."; Simon Rodbard, Assistant Director of the Cardiovascular Department, Medical Research Institute, Michael Reese Hospital, Chicago, "Effect of Diet on Diseases of Blood Vessels."; George M. Wheatley, Metropolitan Iife Insurance Company, New York, "The Effect of Obesity on Your Length of Life."

Dr. Sheinin Honored.—Dr. John J. Sheinin, President of The Chicago Medical School, has been chosen for the first Annual Gold Medal Award of Alpha Rho chapter of Phi Lambda Kappa fraternity in recognition of his devotion to the development and progress of the School and to the general welfare of the student body. The presentation was made by Sanford I. Cohen, president of the chapter, at the annual fraternity dinner-dance given May 24 at the Furniture Club of America.

Society News.—Dr. Edward M. Dorr presented the following papers before the Wisconsin State Medical Society: "Cesarean Sections in Infected and Potentially Infected Cases," "Treatment of

Eclampsia and Pre-eclampsia," and "Obstetrical Anesthesia and Anelgesia." At its last meeting, the Chicago Gynecological Society named Dr. Dorr President-elect. Dr. Norman G. Parry was elected Chief of Staff at the annual dinner meeting of the Medical Staff of Wesley Hospital. Dr. H. Ivan Sippy was elected Vice Chief of Staff, and Dr. Earl O. Latimer, Secretary-Treasurer. Dr. Walter G. Maddock has been named secretary of the International Society of Surgery and chairman, committee on nutrition, American College of Surgeons. He was associated with the publication of Callander's "Surgical Anatomy" by Anson and Maddock. —A meeting of the Chicago Rheumatism Society was held April 30. Eugene Hess, Ph. D., research associate, Rheumatic Fever Research Institute, Northwestern University, discussed "The Mucoproteins in Serum and Tissues." Saul Roseman, Ph. D., assistant professor of pediatrics and biochemistry, University of Chicago spoke on "Effects of Salicylates and Gentisate of Hyaluronic Acid."

Special Lectures.—Dr. Paul H. Hoch, Senior Clinical Psychiatrist and Principal Research Psychiatrist New York State Psychiatric Institute, gave a special series of lectures March 26, under the auspices of the Veterans Administration Hospital, Downey, Ill. Titles of the lectures were, "The Pseudoneurotic Form of Schizophrenia" and "Some Theoretical and Clinical Aspects of Anxiety".

Personal.—Dr. Louis B. Newman, Chief of the Physical Medicine and Rehabilitation Service at the Veterans Administration Hospital, Hines, Illinois, addressed the staff of the Veterans Administration Hospital and the faculty of the University of Arkansas School of Medicine at Little Rock, Arkansas on April 28, on "Physical Medicine and Rehabilitation of Patients with Spinal Cord Injuries". In addition, he conducted several clinics. This is part of an Educational Lecture Program sponsored by the Veterans Administration.—Dr. Robert W. Keeton, Evanston, recently retired chairman of the Department of Medicine, University of Illinois College of Medicine, has been appointed president of the board of directors of the Suburban Cook County Tuberculosis Sanitarium district. He succeeds Dr. Jerome R. Head, who resigned April 15.—Dr. Maurice H. Cottle gave a course on Reconstructive Surgery of the Nasal Septum at the Hartford Hospital, Hartford, Conn., April 24-26.—Dr. Philip Thorek addressed the Sectional Meeting of the International College of Surgeons in Cleveland on March 19th, his subject being "Prevention and Correction of Common Duct Injuries." On April 4 he spoke on "Abdominal Surgery" before the Montgomery County Medical Society in Dayton, Ohio.

New Cardiovascular Unit.—A Midwestern Cardiosity of Illinois has started construction on a new classroom and laboratory building in the Medical Center District on Chicago's near West Side which will permit the Colleges of Medicine, Pharmacy, and Dentistry to increase their enrollments.

The six-story structure, known as the East Unit of the Dentistry-Medicine-Pharmacy Building, will be located at Wood and Polk Streets.

When completed, the new building will permit the University to accept a larger number of qualified students who otherwise could not gain admission. The number of applicants has far exceeded available places in recent years.

The College of Medicine—already the largest of the nation's 79 accredited medical schools—expects to increase its enrollment from 166 to 190 students in each class. The College of Pharmacy will be able to increase its registration from 125 to 175 students per class, while the College of Dentistry will enroll 90 in each class, instead of 80. The Graduate College also will be able to accommodate more students in the health sciences, while the School of Nursing anticipates enrolling its first class of full-time students.

LA SALLE

Society News.—Dr. Claude N. Lambert, associate professor of orthopedic surgery, University of Illinois College of Medicine, addressed the LaSalle County Medical Society in LaSalle May 8, on "Principles of Fracture Treatment."

MADISON

Society News.—"Water Balance in Burns" was the title of a talk by Dr. Carl A. Moyer before the Madison County Medical Society at St. John's Methodist Church, May 1. Dr. Moyer is professor and head of the department of surgery, Washington School of Medicine at St. Louis.

Physicians Honored.—On May 10 the Madison County Medical Society gave a dinner honoring Doctors Alfred C. Everett of Granite City and J. Mather Pfeiffenberger of Alton. The occasion marked the presentation of the fifty-year club insignia of the Illinois State Medical Society to both physicians. Dr. Groves B. Smith was the toastmaster and Dr. Edwin Hamilton, Kankakee, a Trustee of the American Medical Association, was the principal speaker. Dr. Everett graduated at St. Louis College of Physicians and Surgeons in 1902. Dr. Pfeiffenberger graduated at Washington University School of Medicine, St. Louis, in 1902.

GENERAL

Dr. LeRoy H. Sloan Heads College of Physicians. —**Dr. LeRoy H. Sloan,** clinical professor, University of Illinois College of Medicine, was chosen president elect of the American College of Physicians at its meeting in Cleveland, April 25. Dr. Sloan, who graduated at Rush Medical college in 1917, has been a member of the faculty of the University of Illinois College of Medicine since 1936.

New Cardiovascular Unit.—A Midwestern Cardiovascular Center specializing in the care of children with operable congenital malformations of the heart was opened at the Children's Memorial Hospital,

Chicago, April 30. Funds totaling $30,000, available on an annual basis, have been allocated by the Children's Bureau of the Federal Security Agency to the University of Illinois Division of Services for Crippled Children for the establishment of the Center.

The potential area to be served by the Center includes the states of Ohio, Michigan, Kentucky, Indiana, Wisconsin, Minnesota, Illinois, Iowa, North Dakota, South Dakota, Kansas, Nebraska and Missouri.

The Division of Services for Crippled Children will arrange with agencies in these states to send children with heart disorders to the Children's Memorial Hospital for treatment. The Illinois Division will be the liaison between the official crippled children's agency of the state where the child lives and the hospital. Funds are to be used primarily for hospital and medical and surgical care, but may also be used for other expenses related to getting care at the long distance from home.

For many years, the Children's Memorial Hospital has treated children with cardiovascular diseases from Chicago and Illinois as well as from other states and several foreign countries. The Children's Bureau has allocated such funds to the Illinois Division and to several other state crippled children's agencies in different sections of the nation in order that children from all states may receive care in the relatively few centers doing this type of specialized surgery.

The establishment of the Center in Chicago was consummated by Delbert L. Price, Administrator of the Children's Memorial Hospital, and Dr. Herbert R. Kobes, Director of the Division of Services for Crippled Children of the University of Illinois.

Ricketts Medal Awarded.—Dr. Thomas Francis, Jr., chairman of the department of epidemiology, School of Public Health, University of Michigan, who was the first to discover more than one influenza virus, will be awarded the Howard Ricketts medal of the University of Chicago, it was announced recently. The Ricketts medal, honoring the late University of Chicago physician who died of typhus May 3, 1910, is a national honor in recognition of outstanding medical work. Established by Mrs. H. T. Ricketts in 1949, the medal has been awarded previously to: Dr. Ludvig Hektoen, University of Chicago professor emeritus of pathology; Dr. Russell Wilder, Mayo Clinic director of medicine; Dr. S. Burt Wolbach, Harvard professor emeritus of pathology; and Dr. Herald R. Cox, director of viral and rickettsial research of the Lederle Laboratory of the American Cyanamid Company. Dr. Francis received the medal at a University of Chicago scientific meeting, May 12, at which he spoke on "The Significance of Variation Among Influenza Viruses".

Scholarship Program Receives Funds.—More than $330,000 has been contributed by five donors to the fellowship and scholarship program of National Medical Fellowships, Incorporated, formerly known as the Provident Medical Associates. The donors were: The Commonwealth Fund, New York, N. Y.; The Field Foundation, Incorporated, New York, Mr. and Mrs. Richard E. Deutsch, New York; the National Foundation for Infantile Paralysis, New York; the Julius Rosenwald Fund, Chicago. New fellowship and scholarship grants to forty-three individuals total $80,000. All of the awards are to Negro physicians and medical students, providing concentrated training in the specialties and support of undergraduates in medicine. Dr. Franklin C. McLean, Chicago, is the secretary of the National Medical Fellowships, Inc.

Health Talk on WGN-TV.—Since the last issue of the Illinois Medical Journal, the following telecasts have been presented over WGN-TV, Channel 9. Titled Health Talk, each telecast carries a subtitle as follows: The Educational Committee is producer.

Morris Friedell and **Fenton Schaffner,** March 24, Radioactive Research in Medicine. Equipment was provided by the Nuclear Instrument and Chemical Company.

Paul Hurwitz, March 31, Two Eyes to See. Equipment was provided by Bausch & Lomb, House of Vision, and Mager and Gougelman.

Harold A. Sofield, Oak Park, April 7, Brittle Bones.

Charles I. Fisher, April 14, Understanding Your Blood Vessels. Equipment was provided by the American Hospital Supply Corporation and Clay-Adams Company.

Frederick W. Merrifield, John R. Thompson and Harold Westlake, April 21, What is Cleft Palate and Cleft Lip.

A. Raymond Eveloff, Springfield, April 28, on Rheumatic Fever.

Carlo Scuderi, May 5, When Your Feet Hurt.

Mitchell Spellberg, May 12, How's Your Colon.

H. R. Oberhill, May 19, Severe Neuralgias of the Face and Neck.

Your Doctor Speaks over FM Station WFJL.—The following transcribed broadcasts were presented over WFJL under the auspices of the Educational Committee of the Illinois State Medical Society and the Chicago Medical Society:

Theron O. Randolph, April 3, on Allergy.

Ferdinand Seidler, April 10, Hip Pain in Children.

Fay M. Whitsell, April 17, on Glaucoma.

Craig D. Butler, Oak Park, April 24, on Our Young People's Problems And How We Can Help Them.

E. Robbins Kimball, Evanston, May 1, The Six, Seven and Eight Year Old.

Eugene L. Slotowski, May 8, Growing Up.

George Eisenberg, May 15, Problems of the Ten and Eleven Year Old.

Joseph R. Christian, May 22, Adolescence—The Ten, Eleven and Twelve Year Old.

Lectures Arranged Through the Educational Committee:

Ann Fox, Woman's Auxiliary to the Champaign

County Medical Society, April 10, in Champaign, There's No Business Like Medical Business.

Albertine L. Rea, P. E. O. Sisterhood, Chapter A.D., April 21, on Mental Health.

Harold M. Camp, Monmouth, Student A.M.A., Stritch School of Medicine of Loyola University, Services and Functions of the Medical Society at County, State and National Levels.

Ernest A. Rappaport, Plymouth Guild, Thomas Memorial Congregational Church, May 1, on Your Mental Health.

Irving H. Zitman, Ravenswood Hospital Nursing School, May 7, Diabetes Mellitus.

Albertine L. Rea, Richard Edwards PTA, May 8, on Physical and Mental Values.

W. W. Bolton, J. A. Sexton School, May 12, on Teen Age Tips on Health and Building Body Bones and Beauty.

Paul K. Anthony, Hale School, May 14, How Temperamental Are You.

J. Joseph Baratz, Howe Elementary School, May 14, How Temperamental Are You.

Robert E. Lee, May 14, Raster Elementary School, on Ten Age Tips on Health.

Franklin Corper, Cleveland School, May 16, on Health and Personality.

Jack A. Weiss, O'Keeffe PTA, May 27, on Psychological Preparation of Children for Operation.

Robert R. Mustell, Bell Parent-Teacher Association, June 19, on The Menopause.

Lectures Arranged Through the Scientific Service Committee:

Harry M. Hedge, Chicago, McDonough County Medical Society in Macomb, on Common Skin Diseases as Seen by the General Practitioner.

Irwin Dritz, Chicago, Kane County Medical Society in Elgin, The Patient as An Anesthesia Risk.

E. William Immermann, Chicago, Champaign County Medical Society, April 10, in Champaign, on Low Back Pain.

Robert Schmitz, Chicago, Rock Island County Medical Society, April 22, on Moline, on Surgical Aspects of Diseases of the Colon.

Harry A. Oberhelman, Chicago, Macon County Medical Society, April 22, in Decatur, Surgical Management of Ulcer.

Wesley A. Gustafson, Chicago, McDonough County Medical Society April 25 in Macomb, on Headaches.

Erich M. Uhlmann, Chicago, Knox County Medical Society in Galesburg, May 22, on Modern Concepts in the Treatment of Cancer of the Breast.

Edwin R. Levine, Chicago, McDonough County Medical Society in Bushnell, May 23, on Dust Diseases of the Lungs.

Sidney A. Portis, Chicago, Whiteside-Lee County Medical Societies, June 19, in Rock Falls, on Medical Management of Psychosomatic Problems.

DEATHS

DR. LOYAL BLAND BAGNALL, DeKalb, who graduated at Loyola University School of Medicine in 1922, died December 10, aged 64.

ORLAND HARLEY BERRY, Bluffs, who graduated at Barnes Medical College, St. Louis, in 1905, died in Jacksonville, March 3, aged 72, of carcinoma of the right lung.

THOMAS BARRETT BOLAND, River Forest, who graduated at Illinois Medical College in 1910, died in Memorial Hospital, New York, February 21, aged 67, of primary carcinoma of the liver.

ARCHIBALD CHURCH. retired, formerly of Chicago, who graduated at the University of Illinois College of Medicine in 1884, died in Pasadena, Cal., May 8, aged 91. He was chairman of the department of nervous and mental diseases at Northwestern University Medical School from 1900 until he retired in 1925.

ELMER E. E. G. COLLINS, Chicago, who graduated at Jenner Medical College, Chicago, in 1910, died May 16, aged 68. He was chief physician for Swift from 1919 to 1949.

EDWIN WALLACE CRUM, Waverly, who graduated at Barnes Medical College, St Louis, in 1900, died February 13, aged 71, of coronary thrombosis.

EDWARD L. DENISON, retired, formerly of Chicago, who graduated at Illinois Medical College, Chicago, in 1895, died April 27 in his home in Ft. Pierce Fla., aged 82. He had practiced medicine in Chicago from 1893 to 1945 when he retired.

CHARLES G. FARNUM, retired, Peoria, who graduated at Rush Medical College in 1901, died April 25, aged 77. He served as a vice president of the Illinois State Medical Society.

JOHN W. GRAY, Geneva, who graduated at the University of Illinois College of Medicine in 1930, died April 23, aged 51. He served in the air corps in World War II.

BERENT HENDRICKSON, Chicago, who graduated at Chicago College of Medicine and Surgery in 1911, died April 17 in his home in Wonder Lake, aged 72. He had practiced medicine in Chicago for 40 years.

GROVER ERMAN JOHNSON, retired, formerly of Chicago, who graduated at the University of Illinois College of Medicine in 1910, died April 25, aged 67, in his home in McLeansboro, to which he returned after retiring. He had practiced medicine in Chicago for 40 years.

HERBERT W. J. KRAMPS, Chicago, who graduated at Stritch School of Medicine of Loyola University, died April 23, aged 44. He was a member of the staff of St. Elizabeth's Hospital.

LARS JOHAN MILLEN, Chicago, who graduated at Bennett Medical College, Chicago, in 1911, died March 24, aged 74, of coronary thrombosis and carcinoma of the prostate.

MICHAEL NELSON, Chicago, who graduated at the University of Illinois College of Medicine in 1904, died April 16, aged 77. He had practiced medicine in Chicago for 46 years.

LAWRENCE P. PIPER, Chicago, who graduated at Northwestern University Medical School in 1906, died April 18, aged 69, of bronchogenic carcinoma.

FRANK J. QUIRK, Chicago, who graduated at Bennett Medical College, Chicago, in 1895, died April 15,

aged 82.

GEORGE WILLIAM ROSS, Watseka, who graduated at the College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, in 1906, died in Guadaljara, Mexico, February 9, aged 68, of coronary thrombosis. He was a past president of the Iroquois County Medical Society.

ROBERT SCHAFER, Chicago, who graduated at the University of Illinois College of Medicine in 1925, died May 1, aged 53. He was on the staff of the South Chicago Community Hospital.

CHARLES J. SCOFIELD, Chicago, who graduated at the College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, in 1901, died in Odell, February 9, aged 73, of cancer.

SAMUEL SINKLER, retired, Chicago, who graduated at Chicago College of Medicine and Surgery in 1908, died April 25, aged 74. He had practiced medicine and dentistry in Chicago for many years.

REJECTED SUITOR

Oscar R. Ewing, federal security administrator, appears to have misjudged the quality of his listeners in a speech made before the National Association of Retail Druggists on Sept. 20. Mr. Ewing, apparently unmindful of the professional quality of the pharmacists' services, based his appeal for support of compulsory health insurance almost entirely on the profit motive.

"Certainly," he reminded them at one point in his address, "any major progress we make in this age-old struggle against sickness and disease is sooner or later reflected in larger receipts for your own cash register." Again, in referring to the checkups given last year to nearly two million children by public-health doctors or private physicians, he added, "And I don't doubt that most of the mothers wound up in the local drugstore with a doctor's prescription of one sort or another to be filled." And again, "Let me point out that the drug trade flourishes in the shadow of the hospital," and "If we can double the number of hospital beds available — as we intend to do over the next ten years — the effect upon your business will be literally enormous." Nor are these the only examples of the theme song of this particular oration.

Since the days when the apothecary was often the doctor and the doctor usually compounded his own prescriptions, up to the present, when the large-scale pharmaceutical manufacturer is a close ally in the progress of modern medicine, the reputable druggist has been an unselfish partner of the reputable physician in the care of the sick. Working long hours, frequently holding himself available day and night for emergency service, the responsible druggist rightly considers himself as something much more than a tradesman.

Subsequent to Mr. Ewing's speech a resolution was passed by the Association repudiating the federal political health scheme.

Mr. Ewing, in his administration of the Federal Security Agency, has demonstrated his capacity for becoming a valuable and highly regarded public servant. There is little doubt that he is one of the able men of the present administration. The question can be raised, however, whether he is serving his country to his fullest capacity while he is almost obsessively preoccupied with the promotion of a plan to which the country is apparently not receptive.

New England J. of Med. Vol. 241: Nov. 24, '49
#21 p. 842 REJECTED SUITOR. Editorial.

Clinical Significance

By virtue of its dual capacity to reduce blood pressure and yet increase blood flow through the kidney, Apresoline provides a new and improved approach to the medical management of hypertensive disorders. Its value is augmented by its tendency to cause significant relaxation of cerebral vascular tone in hypertensive patients, oral as well as parenteral effectiveness, and relatively low toxicity.

Indications

Apresoline has proved therapeutically useful in widely differing forms of hypertensive disease. The drug is of distinct value in essential and early malignant hypertension, its effectiveness often being more marked in the severe (although not terminal) phases of these disorders. It is also most effective in hypertension persisting or recurring after sympathectomy.

Preliminary studies indicate that worthwhile results also may be expected in toxemias of pregnancy and in acute glomerulonephritis. When renal damage is advanced, as in chronic renal hypertension and chronic glomerulonephritis, the value of the drug is considerably less, and it may be hazardous if not used with extreme caution and constant observation.

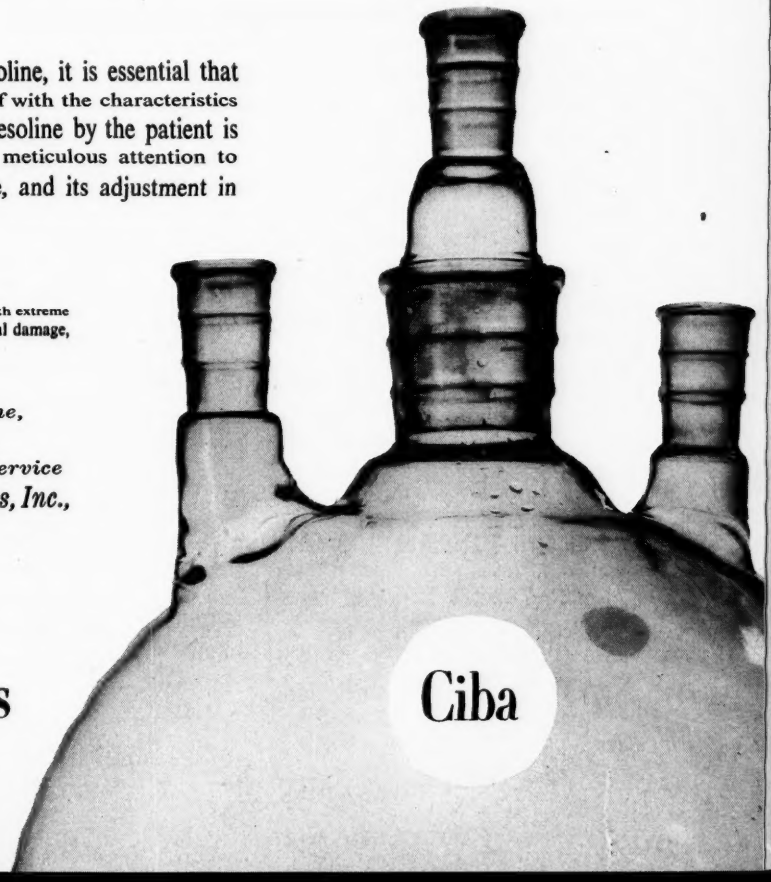
Administration

Before prescribing or administering Apresoline, it is essential that the physician thoroughly familiarize himself with the characteristics of the drug. The benefit derived from Apresoline by the patient is dependent in vital degree upon the most meticulous attention to individualization of administration, dosage, and its adjustment in accordance with response.

Caution

Apresoline, like any hypotensive agent, should be used only with extreme caution in patients with coronary artery disease, advanced renal damage, and existing or incipient cerebral vascular accidents.

For complete information on Apresoline, contact the Ciba Professional Service Representative or write the Medical Service Division, Ciba Pharmaceutical Products, Inc., Summit, New Jersey.



Hypertensive Disorders

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PHYSICAL MEDICINE ABSTRACTS

EMIL D. W. HAUSER, DEPARTMENT EDITOR

THE HIP ROTATOR

Guy Beauchamp, M.B., Ch. B. In THE BRITISH JOURNAL OF PHYSICAL MEDICINE, 14:11: 259, November 1951.

A detailed description of a hip rotator is given, with a brief notation of its therapeutic and diagnostic uses.

Although the hip rotator was designed primarily to give resisted exercises for the muscles of rotation, active, passive, resisted and assisted movements also may be given. The hip joint can be rotated and mobilized by manual operation of the metal graduated scale.

The advantages are readily seen. There is no need to undress, which in itself is a great time-saver, and the patients can, if necessary, put themselves on the machine and carry out the movements, while mobilization needs but a few moments of the physical therapist's time at the end of the exercises. The treatment time averages seven minutes.

Limitation in abduction is treated by mobilization of the hip joint in ever-increasing degrees of abduction as measured on the scales on the front of the frame of the machine.

COMBINED BONE AND NERVE INJURIES

William J. Tobin, M.D. In THE MILITARY SURGEON, 109:5:621, November 1951.

This paper is concerned primarily with the reconstructive phase of the surgical treatment of cases of combined nerve and bone injuries. In the type of cases discussed, it is assumed that infected wounds have healed, adequate skin coverage has been attained, and so forth.

Those cases of peripheral nerve lesions associated with fractures constitute by far the majority requiring the cooperation of the neurosurgeon and the orthopedic surgeon. Many of these cases are admitted wearing plaster casts on the involved extremity. Upon removal of the cast, very few are ready for their definitive surgery. An unavoidable handicap from the surgical viewpoint is cast stiffness of muscles, ligaments and joints due to the treatment of the fracture. Physical therapy in the form of massage, radiant heat, active and passive motion, is a valuable asset in preparing these patients for their definitive surgery. Both the soft tissues and bones in these cases show a disuse atrophy of varying degrees. Mobilization of the extremity as much as possible, depending on the nature of the fracture, and early physical therapy improve the general condition of the extremity and further insure a better postoperative result. Occupational therapy with its emphasis on active motion is a valuable adjunct in improving these cases. This is particularly useful in the hand where stiffness of the small joints is marked and at times resistant to treatment. Mechanical supportive measures such as cock-up splints for wrist drop from radial nerve paralysis and some type of a drop foot brace for peroneal nerve

(*Continued on page* 42)

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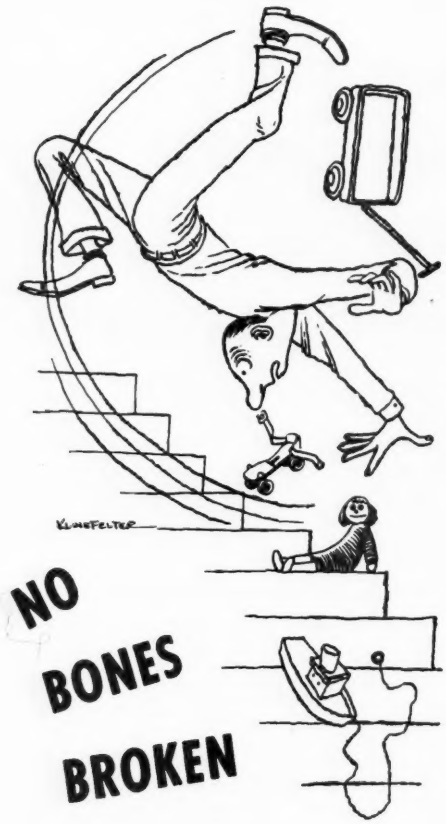

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Physical Medicine (Continued)

paralysis should be used whenever indicated. Highet emphasizes the importance of splinting paralyzed muscles to prevent stretching. When reinnervation does occur in a stretched muscle, there is less functional recovery than in a protected muscle. Over-splinting by rigid, immovable splints is more harmful than no splinting at all, however. The splint should be one that can be removed to permit proper physical therapy and occupational therapy.

Early mobilization of joints is an essential preliminary step in the treatment wherever and whenever possible. For facility and comfort in transportation, plaster casts are unquestionably indicated and necessary. Too often, however, plaster immobilization is permitted to remain on the extremity longer than is really necessary. In femoral shaft fractures, the cast should be removed on admission and the extremity put up in a balanced type of traction with or without skeletal traction as the nature and status of the fracture demand. The same principle applies in upper extremity fractures.

(*Continued on page* 44)

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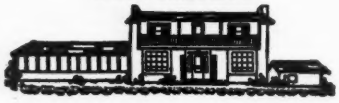

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H. J. Carr, M.D., Staff Physician.

Physical Medicine (Continued)

THE MECHANISM AND PHYSIOTHERAPEUTIC RELIEF OF PAIN

Clive Shields, B.M. Oxfd., London. In THE LANCET, No. 6681, p. 459, September 15, 1951.

Pain is hard to define. The lexicographers and the poets are singularly unhelpful, for they invariably contrast pain with pleasure; but, since pleasure is an emotion, and pain is perceived through the senses, the two experiences are in no way comparable.

Those who are concerned with the treatment of postural defects in children must have been impressed by the infrequency with which such patients complain of pain: whereas in the adult with these conditions it is generally pain that compels him to seek medical advice.

It is noteworthy also that the localization of pain by children is very inexact. Precision in locating pain comes with the passage of years, and this can be due only to the storing of past experiences.

Suggestion is used in the physical therapeutic relief of pain and is common to all therapeutic

(*Continued on page* 46)

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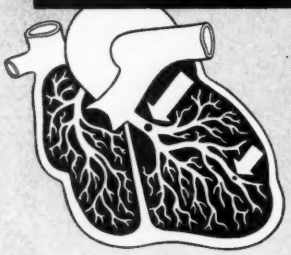

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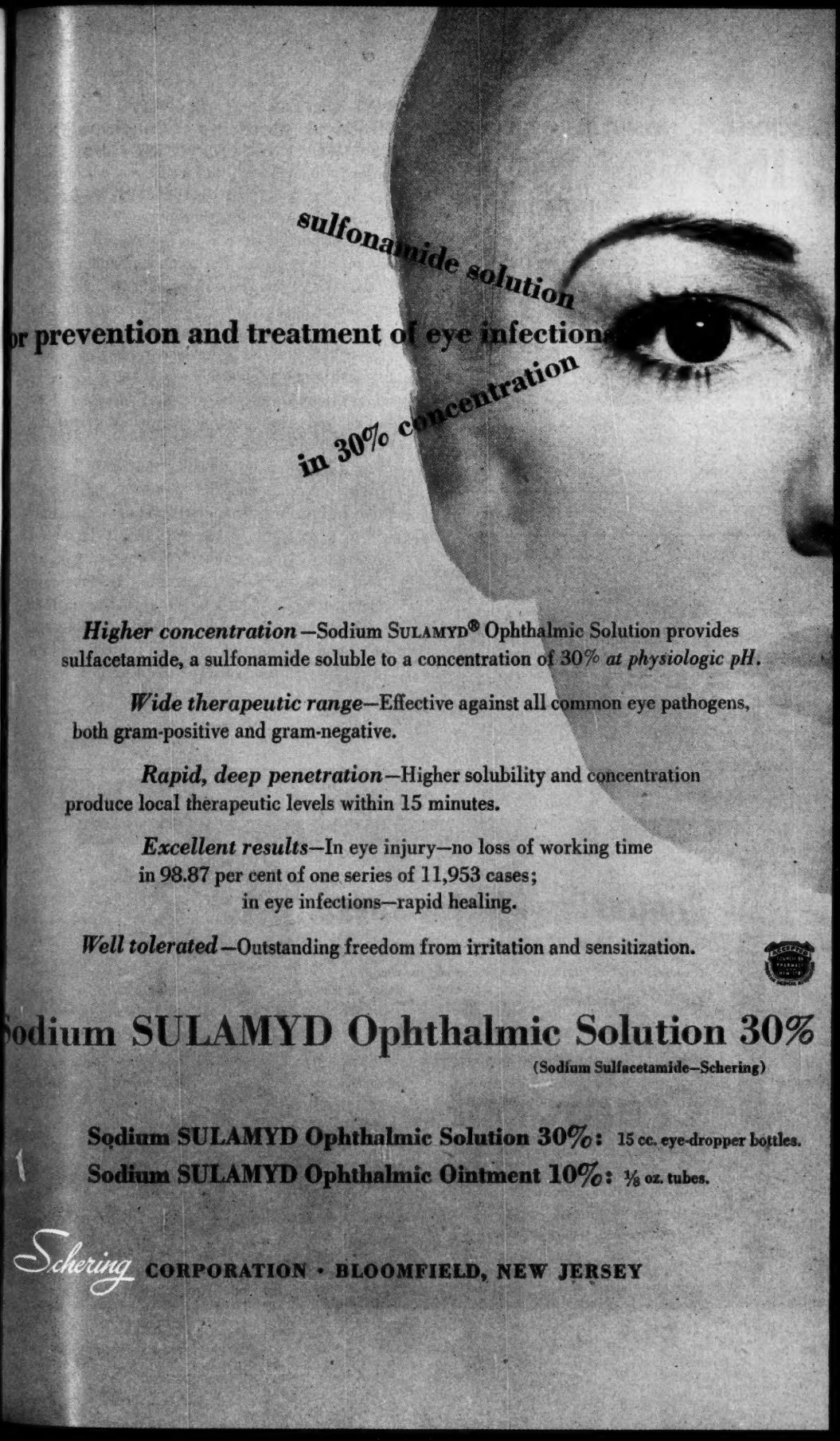

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Physical Medicine (Continued)

measures. For example, class exercises owe their superiority over individual exercises to suggestion, imitation, and competition, and few would deny the value of group therapy.

The mechanism of rest in relieving pain depends on the cause of the pain, but generally it eliminates frictional irritation in joints, tendons, and muscles, and relieves muscle spasm; and in pain due to ischemia, whether of muscle or nerve, it reduces the metabolic requirements of damaged tissue. Conversely, "rest pain," seen in peripheral circulatory failure, may be relieved by modified and graduated activity increasing the collateral circulation.

It is a common observation that pain due to swelling—e. g., in massive edema of the legs in cardiac failure or in nephritis—is always aggravated by coexistent inflammation. It has been suggested in explanation of this that in inflammation histamine or a histamine-like substance is liberated. The chief objection to this is that histamine when injected gives rise to itch but not to pain, and that histamine when ionized relieves certain types of peripheral pain. Further, Schu-

(*Continued on page* 48)

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From babies to brutes, itching is a dermatologic common denominator which aggravates the patient and the condition. For relief, Cremacal offers cooling, antipruritic effectiveness, and also physical protection: the tough film upon drying resists scratching and irritation from clothing.

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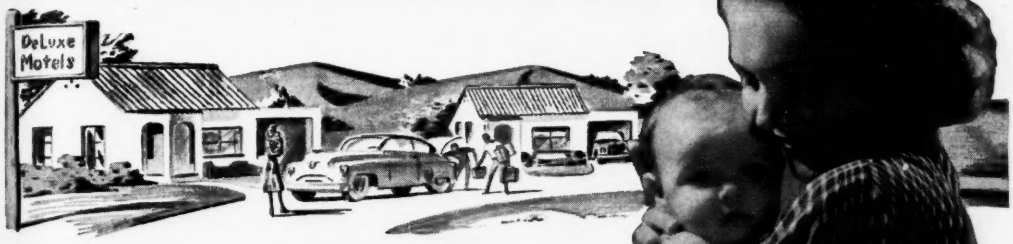
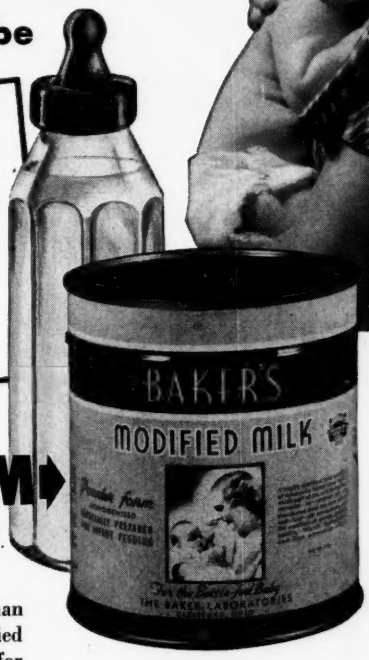


Many doctors prescribe

Baker's Modified Milk



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If refrigeration is not available in the home, or when mother and baby are traveling, Baker's Modified Milk *powder* is safe, easily dissolved and easy to use.

In the home, sufficient powder for each feeding may be measured into capped, clean, dry, sterile nursing bottles and warm, boiled water added at feeding time. When traveling, the bottles may be prepared at home, and the boiled water carried in a thermos bottle.

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macher (1943) showed that a skin erythema induced by local irradiation with ultra-violet rays reduced the pain threshold of the treated skin by fifty per cent, whereas the same degree of erythema produced by nicotinic acid left it unaltered. He concluded that the difference was due to the presence or absence of inflammation.

This is very confusing when we try to explain the mechanism of pain relief by counter-irritation. To say that counter-irritation operates because spatial summation does not take place with pain as it does with heat and cold, and that it is only possible to feel the greater of two simultaneous painful stimuli, is no doubt true, but it does not explain why moderate counter-irritation, not even reaching the intensity of discomfort, may abolish the primary pain.

A prolapsed intervertebral dict gives rise to pain because it induces ischemic neuritis; and, though no physical therapy measure that the author knows of can reduce the prolapse, properly applied heat, combined with rest and traction, often can relieve pain by resolving the inflammation and surrounding edema which accompany the prolapse.

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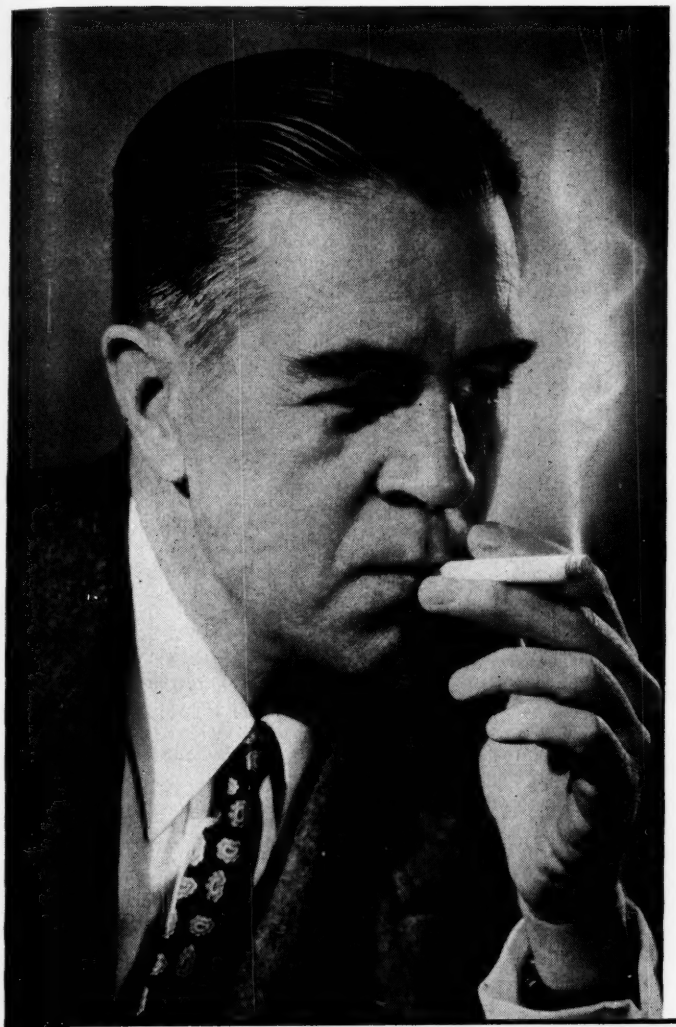

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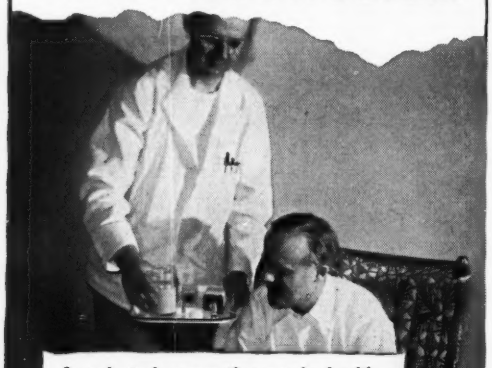

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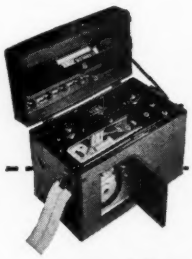
During the past few years every report pertaining to the surgery of varicose veins has emphasized the importance of an adequate high ligation of the great saphenous vein. This implies that all of the branches in the upppermost thigh region are ligated, together with ligation of the saphenous vein flush with the femoral. If a procedure of this type is not carried out, the varices will probably recur. As to the next operative step to be taken, however, there is a great difference of opinion. Any one of the following four types of procedure may be performed: (1) obliteration of the residual varices by repeated postoperative injections of a sclerosing solution, (2) mass retrograde injection of the distal saphenous vein, (3) a stripping procedure, or (4) multiple ligations of the saphenous and perforator veins. *Excerpt: Importance of Adequate Excision of all Incompetent Perforator Vessels in the Surgical Treatment of Varicose Veins, Robert A. Nabatoff, M.D., N. Y., N.Y. State J of M, March 1, 1952.*



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BOOK REVIEWS

CELLULAR CHANGES WITH AGE. By Warren Andrews, Ph.D., M.D., Professor of Anatomy and Chairman of Department. The George Washington University School of Medicine, Washington, D.C. 74 pages. $2.50. 1952. Charles C. Thomas, Springfield.

This interesting monograph describes some of the structural changes which occur in cells in the course of the aging of the organism. It partially explains why organisms grow old and die. It emphasizes that answers which point toward a particular system, such as the cardiovascular system in man, do not solve the problem. Changes in other organs which may be less conspicuous, may be of more importance in aging, either by themselves or by effects on the cardiovascular system.

The book points out that the doubling of the life span of man in the last century is due largely to progress in pediatric practice. Similar progress in geriatrics might relieve some of the problems which have arisen with the development of an older population. It summarizes some of the fundamental research in this field, and indicates the large gaps in our knowledge.

J. C. S.

HISTOPATHOLOGICAL TECHNIC, INCLUDING A DISCUSSION OF BOTANICAL MICROTECHNIC. By Aram A. Krajian, Sc. D., formerly in Department of Pathology, Los Angeles County General Hospital, Los Angeles, Calif. and R. B. H. Gradwohl, M. D., Pathologist to Christian Hospital; Director, Gradwohl School of Laboratory and X-Ray Technique, St. Louis, Mo. Second Edition. With 131 Text Illustrations and 7 Color Plates. St. Louis, The C. V. Mosby Company, 1952. $6.75.

The second edition of this book includes the histopathological technic that the authors have found most rapid, economical and practical throughout the years. The use of frozen sections for routine work is emphasized. There are rather complete sections on use and care of microtome knives and on the autotechnicon.

The book is not intended as a reference work, but does give extensive discussion of the author's favorite methods.

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BOOKS RECEIVED

The following books have been received for reviewing, and are herewith acknowledged. This listing should be considered as a sufficient return for the courtesy of the sender. Books that appear to be of unusual interest will be reviewed as space permits each month. Readers desiring additional information relative to books listed, may write the Editor who will gladly furnish same promptly.

CURRENT THERAPY 1952 — Latest Approved Methods of Treatment for the Practicing Physician. Editor: Howard F. Conn, M.D., Consulting Editors: M. Edward Davis; Vincent J. Derbes; Garfield G. Duncan; Hugh J. Jewett; William J. Kerr; Perrin H. Long; H. Houston Merritt; Paul A. O'Leary; Walter L. Palmer; Hobart A. Reimann; Cyrus C. Sturgis; Robert H. Williams. 849 pages. Philadelphia & London: W. B. Saunders Company, 1952. Price $11.00.

MODERN DRUG ENCYCLOPEDIA and Therapeutic Index. Edited by Marion E. Howard, M.D., F.A.C.P. Associate Clinical Professor, Department of Internal Medicine, Yale University School of Medicine; Associate Physician, Grace-New Haven Community Hospital and the Department of University Health, Yale University, New Haven, Conn. Fifth Edition. Drug Publications, Inc., 49 West 45th Street, New York 36, New York.

LIVING IN BALANCE — By Frank S. Caprio, M.D., The Arundel Press, Inc., Washington 13, D. C. $3.75.

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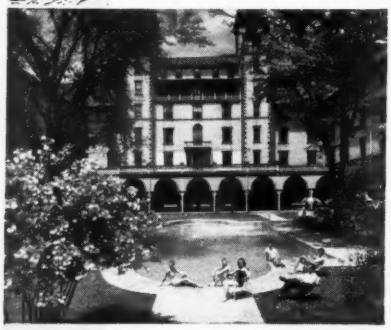

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It will interest the intelligent fraction to know what the researchers are undertaking to learn at our expense. Here is a full list of the grants made in the month of September, for "Research" in the nervous and mental field only.

An empirical study of social adjustment, social technique, and personal values.

A study of the role of leadership and the function of the group in group psychotherapy.

Sibling rivalry as a psychological hazard.

The effect of aging upon the central nervous system—A physiological and psychological approach.

Validation of projected need for security.

Rooming-in project.

Relationship of social structure to psychiatric disorders.

Prediction of psychosis in children by means of the Rorschach test.

Level of schizophrenic involvement in adults.

To demonstrate the inter-relationship between autonomic changes, emotions, and certain cutaneous reactions in normal and pathologic skin.

Psychological and anthropological analysis of topical autobiographies of displaced people verbatim recorded in D. P. Camps.

A study of electroencephalographic (EEG) phase relationships and their physiological, neurological, psychological and psychiatric significance.

Diagnostic and prognostic significance of prodromal factors in mental illness.

Study of the validity of vocational tests in predicting efficiency of mental hospital attendants.

A study of the theory of complementary needs.

(Continued on page 60)

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"Research" (Continued)

A quantitative comparison of two types of psychotherapy.

A preschool project for young mentally handicapped children.

Relation of children's personality factor measures to heredity and environmental circumstances.

A research program in schizophrenia and depressions.

Anxiety and frustration in human and animal behavior.

A study of security of individuals in groups and an experimental attempt to increase the security of insecure members.

An investigation of the dynamic processes involved in the "Round-table" method of group psychotherapy.

Tolerance for environmental stress in aged and newborn sheep and goats.

Person and situation as determinants of constructive community behavior (The Springdale Project)

Changes in perceptual functions in organic psychoses.

Childhood schizophrenia.

Survey of laws pertaining to administration of mental institutions.

Basic research in personality structure in relation to the health or disease of the oral cavity.

Research conference group on psyhosurgery.

Community factors affecting the degree of mental health of workers in a defense production community.

Cultural components in attitudes toward pain.

(*Continued on page 62*)

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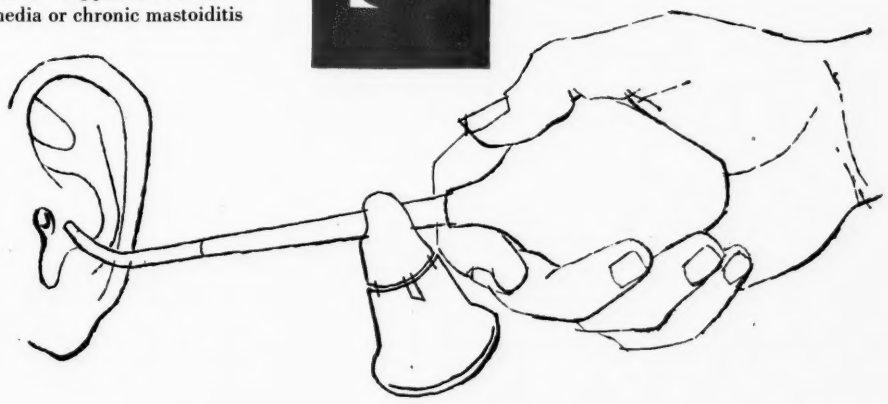

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The tuberculosis mortality rate now reaches its height among those of 60 years and older. This is exceedingly encouraging as it indicates that the effort directed against the tubercle bacillus has borne choice fruit. It now appears that as the older persons with a relatively high incidence of tuberculous infection are replaced by the young with a low incidence, the mortality from tuberculosis will be much lower when they become old than obtains among those who are now in the old-age period. J. Arthur Myers, M.D., Ed. Journal-Lancet, April, 1950.

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And how did these wise ones figure out amount needed to within $56 of $20,000? These lads must be good.

As to the "Hutterites," the "Springdale project" and the "Peyote cult" and a lot more)—I have not been able to find out what they are.

Excerpt: Southern Med. & Surgery, Dec. 1951

After a review of available data on the action of isonicotinic acid hydrazide and its isopropyl derivative upon the tubercle bacillus *in vitro*, and upon the course of experimental tuberculosis in animals and clinical tuberculosis in man, it may be stated that their demonstrated action, although highly encouraging, appears in no way to alter the basic principles of the treatment of tuberculosis as presently understood. Much more work will need to be done to ascertain the exact place of these drugs in the treatment of this disease. It is anticipated that further information will accumulate rapidly. The Exec. Com. of the American Trudeau Society (Medical Section of the National Tuberculosis Association), Tuberculosis Abstracts, May, 1952.

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